

COMPUTERWORLD

THE NEWSPAPER FOR IT LEADERS • WWW.COMPUTERWORLD.COM

JULY 30, 2001 • VOL. 35 • NO. 31 • \$5 COPY

10-YEAR AT&T OUTSOURCING DEAL DUMPED

*In belt-tightening move, energy firm
backs out of pact after only two years*

BY LINDA ROSENCRANCE

McDermott International Inc. last week confirmed that it plans to drop what was supposed to be a 10-year global IT outsourcing deal with AT&T Corp.'s professional services unit. The New Orleans-based energy services and engineering company cited efficiency issues as the reason for taking back control of the technology operations only two years into the deal.

According to an internal

memo obtained by Computerworld, the \$600 million outsourcing agreement between McDermott and Florham Park, N.J.-based AT&T Solutions will be terminated effective Sept. 30. After that date, the memo said, responsibility for IT design, implementation and management services provided by AT&T will revert to McDermott.

"We are bringing our IT operations in-house," said McDermott, *Outsourcing*, page 61

**SPENDING
STRATEGY**

CRITICS AIM VOLLEY AT WINDOWS XP

*But many users are
still moving to Win 2k*

BY PATRICK THIBODEAU
WASHINGTON

It was as if the X in the forthcoming Windows XP operating system were a target. Last week, lawmakers and privacy activists launched new assaults against Microsoft Corp., aiming to force changes to an operating system that critics

claim raises privacy and competition concerns.

But for corporate IT managers, the battle over XP may be peripheral. Analysts said those managers, many of whom are still rolling out Windows 2000, aren't planning any quick moves to XP. If the political and legal maneuvering forces Microsoft to delay its scheduled October release of the new operating system, it *Windows XP*, page 16



DAVID HOLLENBACH

defusing workplace ANGER

Budget cuts, layoffs, mergers, round-the-clock emergencies — it's enough to push some IT workers over the edge. Are your managers prepared to prevent violence before it strikes? Here are some steps that IT managers can take to identify the warning signs for blowups and help staffers channel their anger.

Story by Melissa Solomon begins on page 32.

ONLINE

Get tips from a Los Angeles workplace psychologist on how to help employees deal peacefully with layoffs, budget cuts and plummeting revenue. www.computerworld.com/rage

LAYOFF TIPS

- If you anticipate a violent reaction, brief security personnel and ask them to stand by.
- Make a statement of fact, rather than open a discussion.
- Terminate workers at the beginning or end of the shift.

SOURCE: THE WORKPLACE VIOLENCE RESEARCH INSTITUTE

IT PLAN SPEEDS BOEING RELOCATION

*Tech team gets 90 days
for move to Chicago*

BY JAMES COPE

The Boeing Co. is in the midst of a massive relocation project that's dependent on an aggressive 90-day plan to get IT sys-

tems in place and operational at the company's new headquarters in Chicago.

The fast action was prompted by Boeing's decision in May to move its worldwide headquarters from Seattle. The plan calls for a fully configured Ethernet network, along with

videoconferencing and phone systems, to be available for 500 employees on 12 floors when the Chicago offices open just after Labor Day.

The aerospace giant is making the move to consolidate corporate oversight within a central business hub that stands apart from the company's various business units.

Boeing, page 14

FOR TODAY

Delicious eBusiness Infrastructure Management Solutions



NO MATTER WHAT
YOUR INFRASTRUCTURE
MANAGEMENT NEEDS ARE,
WE HAVE SOLUTIONS
THAT WILL SATISFY
YOUR APPETITE.

Open 24 hours.
Every day.
ENSURING OPTIMAL
DELIVERY OF SERVICE.

CALL YOUR CA
SALES REPRESENTATIVE
OR VISIT CA.COM
FOR OUR SPECIALS.

Chef's Network & System Management Solutions

Network and Systems Management Market Price
Service Level Management Market Price
Performance Management Market Price
Advanced Network Operations Market Price

Automated Operations Management Entrees

AutoSys® Job Management Market Price
Output Management Market Price
Data Transport Market Price

Hot IT Resource Management Solutions

Asset Management Market Price
Software Delivery Market Price
Remote Control Market Price
Service Desk Market Price

Triple Decker Database Management Solutions

Database Performance Management Market Price
Database Administration Market Price
Database Backup and Recovery Market Price

Web Infrastructure Solutions from The Grill

Management for WebLogic Market Price
Management for WebSphere Market Price
Management for Web Server Market Price
Management for MQ Series Market Price

Tasty Application Management

Application Management for ERP Market Price
 ♦ Management for SAP ♦ Management for PeopleSoft
Application Management for GroupWare Market Price
 ♦ Management for Lotus Notes ♦ Management for Exchange

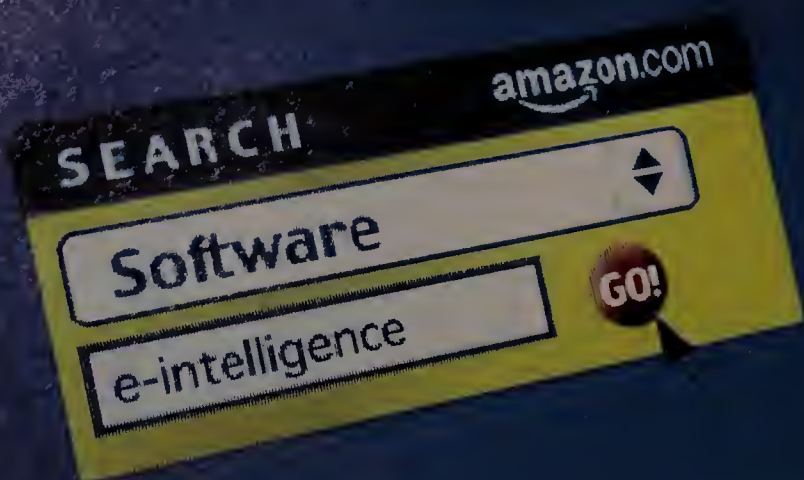
Unicenter[®]

THE BEST INFRASTRUCTURE MANAGEMENT SOFTWARE.
AVAILABLE À LA CARTE. BON APPÉTIT.

In infrastructure management, no two appetites are alike. That's why Unicenter lets you choose only the components you need, just when you need them. Of course, it's also still available prix fixe. Regardless, the individual elements will work together seamlessly. So you can build end-to-end infrastructure management solutions for your business without biting off more than you can chew.



Computer Associates[™]



The day Amazon.com
went shopping.

Books, CDs, electronics, toys, software. You name it, you can find it at Amazon.com. But when it was time for these online pioneers to do some shopping of their own, they turned to SAS. That's because we delivered just what Amazon.com was searching for – the next generation of thinking on data mining and e-Intelligence. And a reliable way to make sense out of an overwhelming volume of raw Web data. So now the folks at Amazon.com can learn more about what their online shoppers really want. Leverage supplier relationships for reduced costs. And ensure that everyone is working together to make each customer experience better than the last. To find out what SAS could do for your business, call us at 800-727-0025 or stop by www.sas.com.

The Power to Know.™





VISIONS OF SUGARPLUMS AND DOUBLE-CLICKS

Despite the slowed economy, retailers are investing in improved navigability and other Web enhancements to lure shoppers to their sites this holiday season. **PAGE 40**

VIRTUAL OBSERVATORY



Astrophysicist Neil de Grasse Tyson, director of the Hayden Planetarium in New York, outlines his vision for a virtual observatory that will hold petabytes of observation data from major telescopes on Earth and in space. **PAGE 47**

JULY 30, 2001

COMPUTERWORLD THIS WEEK

NEWS

6

6 Chevron deploys software to control network access and manage IT assets in 40 countries.

7 United Air Lines beefs up data management with plans to integrate five systems and eliminate duplicate data sets.

7 Corporate executives urge Congress to use caution when imposing privacy regulations.

8 HP buys a storage management software vendor and unveils plans for a line of disk arrays based on the emerging iSCSI standard.

12 Ford turns to a third party for key global supply chain logistics.

15 Boeing begins the painstaking work of building links to online marketplaces, including devising a way to access 18 different procurement systems.

BUSINESS

29

30 Workstyles: Apex Learning's IT employees don't get summer vacations, unlike the children in the schools the company serves.

30 Jim Champy offers questions that should be asked if your firm is considering a business partnership.

32 Violence in the workplace is more common than you might think. Will you know what to do if it strikes in your office?

36 SANs are growing in value to managers grappling with an ever-increasing amount of data.

38 Future IT managers need more than just technical skills to rise through the ranks.

42 QuickStudy: Demographic segmentation tools can help you get to know your customers like never before.

TECHNOLOGY

45

46 Security Journal: In his new job, and with no network map to go by, Mathias is still able to develop a road map of his organization's IT security infrastructure.

48 Wireless networking is just one of the IT infrastructure changes that benefit both the patients and the staff at The Connecticut Hospice.

50 Hands On: With Windows XP, Microsoft has finally put to rest the 9x code base. But are the improvements worth the upgrade?

51 Emerging Companies: ProSight's software creates quick cost/benefit assessments of IT projects for prioritization and management reports.

54 Culture counts for IT consultants who are looking to sign on with the right consultancies. Here are tips on how to find the right match for you.

OPINIONS

22

22 Patricia Keefe writes that today's tough economy may be providing the perfect time to go after that big IT project.

22 Pimm Fox says Microsoft's recent announcements regarding Java will cost IT organizations more money.

23 Lenny Liebmann writes that IT and business managers must take advantage of the new pricing rules of the online game.

24 Michael Gartenberg offers some guidance on which personal digital assistants are best for your users and organization.

62 Frank Hayes says IT departments must rediscover the need for speed and help everything move faster in their companies.



MORE ONLINE For breaking news, updated twice daily at noon and 5 p.m., visit our Web site. www.computerworld.com/latestnews

Editorial/Letters	22, 23, 25
How to Contact CW	60
Company Index	60
Shark Tank	62

WWW.COMPUTERWORLD.COM

ONLINE

FOCUS ON PRIVACY

The head of Fenwick & West LLP's Privacy and Information Security Group discusses congressional attempts to craft privacy legislation. www.computerworld.com/security

REDUCING RAGE

For tips on how to lower the chances for violence when laying off employees, as well as an interview with workplace psychologist Joseph Dadourian, head to www.computerworld.com/rage

PC MEMORIES

Remember your first home computer? Or when RAM was measured in kilobytes, and storage was on cassette tapes or place-mat-size floppies? Share your memories in our online discussion forum as we prepare to celebrate the 20th anniversary of the IBM PC. www.computerworld.com/pcmories

CAN REAL-TIME PRICING HELP SALES?

Robert Drescher, president and CEO of Optivo, makes the case that real-time monitoring of online commerce could help merchants maximize profits by more effectively adjusting their prices. www.computerworld.com/ecommerce

AT DEADLINE

Oracle Users Demand Support Extension

More than 50 users of Oracle Corp.'s business applications have launched a petition requesting an extension of the date that support for Oracle 10.7 is to be discontinued. The users submitted a letter requesting that the release be maintained through December 2004. Support for the applications is slated to stop in December 2002. The firms that issued the petition - including Beaverton, Ore.-based Nike Inc., San Francisco-based Wells Fargo & Co. and Buffalo, N.Y.-based Goodyear Dunlop Tires North America Ltd. - claim that's not enough time to get their money's worth on their investment. An Oracle spokeswoman said the firm had just received the petition and hadn't come to a decision as of Friday.

DOJ Asks for Denial of Microsoft Rehearing

The U.S. Department of Justice and the 18 remaining states involved in the Microsoft Corp. antitrust case last week asked the U.S. Court of Appeals to deny Microsoft's request for a rehearing on part of the decision issued by the court last month. The Justice Department and its state-level allies claimed that Microsoft went beyond the scope of what's allowed at this stage of the legal process and covered areas not germane to the appellate court when the company made its request.

Dot-Gone Slowdown

Chicago-based Challenger, Gray & Christmas Inc., which has followed the dot-com fallout for more than a year, said this month's lay-off numbers hold some hope for those waiting for a high-tech industry turnaround. Although dot-coms announced plans to cut 8,697 jobs this month - four times as many as last July - that was still the lowest monthly number of layoffs since October, when there were 5,677.

Chevron Tightens Control on Net Access

New software aids global project to track assets and users in 40 countries

BY DAN VERTON

CHEVRON Information Technology Co. inked a deal last week to deploy software that will offer enterprise resource provisioning and role-based network access control for up to 31,000 users in 40 countries.

Chevron Corp.'s San Ramon, Calif.-based technology arm plans to deploy eProvision Day One software from Rochelle Park, N.J.-based Business Layers to build a centralized control process for managing its IT assets and controlling users' access to corporate networks.

Such setups aren't for everyone. Deploying this software can be expensive, and the return on investment is often best when the enterprise is very large, according to industry experts. But analysts and officials familiar with the Chevron deal said it's expected to solve nagging problems for the company, including keeping track of IT assets and the identities of authorized users of the company's corporate systems.

Business Layers' eProvision Day One software creates user profiles via XML and the Lightweight Directory Access Protocol to track key user groups. For example, the software will track user accounts for voice mail, e-mail and cell phones, as well as network rights for all new and existing Chevron employees. In addition, a self-service Web site will handle user IDs and workgroup membership change requests for internal and external users, and some users will be able to make a limited number of changes themselves.

Business Layers' approach will allow Chevron to make use of its existing data directo-

ries, said David Everett, senior systems architect at Chevron. It replaces a much more decentralized system.

"We had employee data in multiple international [human resources] databases," said Everett. "In some cases, Excel was the database."

Most important, the application has "deprovisioning" capabilities that will allow Chevron to remove a user as soon as he is fired or laid off or leaves the company. This task has been a major headache for large companies, according to Christy Hudgins, an analyst at The Burton Group, a network

infrastructure research firm in Midvale, Utah.

The centralized approach is reminiscent of the way mainframe systems are set up, but Chevron's implementation is cutting-edge because the company is trying to roll out electronic-provisioning and role-based access control simultaneously, said Hudgins.

While provisioning is "one of the key infrastructure products you need to move forward with e-commerce," it's still very early in the market's development, Hudgins said. "The products are less than perfect and very expensive and very process-intensive."

"This is the kind of system where you start out small and gradually expand it," she added.

Chevron will run pilot proj-

The Competition

Firms in the security administration market differ mainly in terms of their architecture and technical robustness. They include the following:

- **Business Layers**, Rochelle Park, N.J.
- **Access360**, Irvine, Calif.
- **BMC Software Inc.**, Houston
- **Courion Corp.**, Framingham, Mass.
- **Systor Security Solutions Inc.**, Greenbelt, Md.

ects through November, said Everett. A final deployment decision is expected soon afterward.

Hudgins and Izhar Shay, president and CEO of Business Layers, both acknowledged that large companies such as Chevron are the only ones that can afford to undertake such projects. Most electronic-provisioning software costs \$30 to \$100 per user on average. ▀

SirCam Worm Strikes Beyond Outlook

E-mail attacks bog down some systems

BY TODD R. WEISS

The W32.Sircam.worm computer virus continued to infect corporate computer systems across the U.S. and around the globe last week.

"We've about ground to a halt here," said Richard Emig, IT supervisor at Admix Inc., an industrial mixing-system maker in Manchester, N.H. "I'm trying to contain things everywhere as best as I can."

The worm spreads itself automatically through e-mails by sending itself to everyone in a user's e-mail address book.

Emig said he has been forced to segregate the PCs of two dozen workers at his company to clean up the system slowdown problems and corrupted .dll files caused by the virus. While each PC had an-

tivirus protection, the simple peer-to-peer network itself didn't, he said.

Similar problems are being resolved at SelectRegistry.com, a Marshall, Mich.-based bed-and-breakfast registry site.

"Production has come to a stop," said Terry Tassos, a third-party network systems engineer called in to fix the damage. "Everyone is afraid to open anything on their computers."

Nomi Bergman, general manager at Time Warner Cable

in Stamford, Conn., said the company's Road Runner Carolina Internet service provider operation in Herndon, Va., had been hit by the virus, with many customers receiving infected e-mails. The company uses several levels of antivirus protection at the client and network levels to defend itself against attack, she said.

"Our mail servers have been affected [by slowdowns], but it hasn't been horrible," Bergman said.

Steve Gottwals, director of product marketing at antivirus vendor F-Secure Corp. in San Jose, said the Sircam worm is sneakier than others because it attacks all e-mail applications, not just Microsoft Outlook, a favorite hacker target.

The potential for damage is compounded due to the fact that commercial antivirus scanning engines may not always identify the worm as harmful, according to Ken Dunham, an analyst at Menlo Park, Calif.-based SecurityPortal.com.

That means companies need to maintain multilevel lines of defense in corporate networks, including firewalls and multiple antivirus software packages at gateways, in groupware and on clients, he said. ▀

MOREONLINE

For more information on this topic, visit our Security Knowledge Center. www.computerworld.com/securitycenter

Personalization Hits the Friendly Skies

United Air Lines to beef up integration and deploy BEA's personalization server

BY LEE COPELAND

United Air Lines Inc. last week launched a far-reaching initiative to bridge the gap between its fleet-management, operations, flight planning, reservations and frequent-flier systems and to offer personalization services to passengers as a result of that improved data flow.

The world's largest air carrier began piloting the multimillion-dollar project to integrate those five departmental systems this summer in order to beef up data sharing among its numerous but isolated functional departments, said Denny Lyons, manager of architecture and technology at United. The project will also eliminate duplicate data sets and improve customer service, he said.

"In the old days, you could get two versions of the truth, depending upon what system you used," said Lyons. "We decided, let's have one version of the truth. We want to make sure that everyone has the right information."

For the project, United will use San Jose-based BEA Systems Inc.'s Tuxedo transaction server and WebLogic application server. One part of the project involves creating Enterprise JavaBeans for executing the business logic among the various systems.

The \$19 billion subsidiary of Chicago-based UAL Corp. chose BEA's technology for the project because many of its transaction systems were built with Tuxedo back in 1995, Lyons said. At that time, Tuxedo was developed by Novell Inc. BEA acquired the product from Novell in January 1996.

The other half of the project involves BEA's WebLogic Personalization Server. Using WebLogic, United plans to develop JavaServer pages that will enable users to get Web-based access to the data in

many of those newly integrated systems.

For example, a customer will have the ability to log on to United's Web site and, in addition to selecting flights, indicate personal preferences such as type of meal and seat assignment. These options are currently available solely through customer service representatives at United's call centers, Lyons said.

Lyons wouldn't disclose the specific costs of the project or how long it will take to complete. He said the project will integrate United's enterprise

Lofty Goals

United Air Lines' integration and personalization plans:

► **The multimillion-dollar project** will integrate United's fleet-management, operations, scheduling, reservations and frequent-flier systems.

► It will **create Web-based personalization services** for passengers as a result of that improved data flow.

► It will be **built using BEA Systems' WebLogic** application server and the Tuxedo transaction server.

Big Companies Urge Congress to Show Restraint on Privacy Matters

P&G, IBM plead their case on Capitol Hill

BY PATRICK THIBODEAU
WASHINGTON

Officials at some top U.S. firms are urging federal lawmakers to show restraint and caution in imposing privacy-related regulatory burdens on their privacy practices.

"Administrative processes such as those required by recent European legislation impose unimaginable burdens for companies like ours, with little or no substantive benefit to the consumers," said Zeke Swift,

Procter & Gamble Co.'s global privacy director, at a hearing last week before the Subcommittee on Commerce, Trade and Consumer Protection.

Swift was referring to the U.S. "safe harbor" agreement with the European Union. U.S. firms that sign up for safe harbor voluntarily promise to provide protections to exported data that are equivalent to Europe's laws. That means providing access to the data and allowing customers to "opt-in"

resource planning system, mainframe databases, Tuxedo-based transaction systems and Web-based applications built with IBM's WebSphere.

Albert Pang, an analyst at IDC in Framingham, Mass., said the project could take more than a year to complete because of the extensive amount of integration work required, but he noted that it's an important step forward in terms of customer service.

"A lot of companies are just beginning to redefine the Web experience for their customers," Pang said. "None of the major airlines have done an adequate job of providing information to customers."

E Networks is another company that has faced legacy application integration challenges. The Los Angeles-based entertainment company recently launched a portal built

with technology from Austin, Texas-based Vignette Corp. that gives employees personalized Web access to a range of information sources, such as human resources and production-scheduling databases.

Although numerous templates are often available from application vendors, each may present the data in a different format, said Jeff Mayzurk, vice president of technology at E Networks.

"It's pretty unlikely that multiple vendors would offer consistent interfaces for different data objects," he said. Mayzurk's team had to custom-develop many interfaces to data sources to ensure that data, including media objects like video clips, stayed consistent. ▀

MORE THIS ISSUE

For additional coverage of IT developments in the airline industry, see page 61.

(provide affirmative consent) for the sharing of certain kinds of data, among other rights.

But complying with safe harbor involves more than signing on to the Commerce Department's list of 78 U.S. companies, like Cincinnati-based P&G, that have pledged to adhere to the agreement. For P&G, it has resulted in a contracting process with all of the company's entities to ensure that the rules are followed. This administrative task "doesn't help consumers at all; what makes a difference is that we have those practices and that people do observe them," said Swift.

This was the sixth hearing on privacy by a subcommittee of the Committee on Energy and Commerce, as part of an effort to educate lawmakers who are now swimming in a sea of pending privacy bills.

The privacy legislation is being sparked by fears that online commerce is making it easy for companies to peep in on personal habits and compile sophisticated customer dossiers. It's also becoming increasingly clear that any data privacy legislation will likely apply to all data — regardless whether it's collected off-line or online.

Lawmakers are being urged to ensure that any privacy rules apply evenly to all businesses because of fairness issues that will be raised if only online merchants have to comply with regulations, explained Paul Misener, vice president of global public policy at Amazon.com Inc. in Seattle.

But even if privacy legislation was Internet-specific, it might be impossible for many companies to distinguish between personal data collected online or off-line, said Harriet Pearson, IBM's chief privacy officer, who testified at the hearing. "It's the same database or set of databases," she said.

Company officials also argued against any specific opt-in or opt-out requirements, contending that it's more important to ensure that consumers understand the choices available to them.

"The important concept here is choice and prominence and presenting it in a conspicuous and understandable way," said Jacqueline Hourigan, director of corporate data policies at General Motors Corp. ▀

MORE THIS ISSUE

For additional coverage of privacy issues, see page 18.

How P&G Manages Privacy

Procter & Gamble's privacy processes involve all aspects of the company.

■ **P&G has a 30-member global privacy council** made up of people responsible for specific data types, such as market research, to manage privacy. IT is part of this group.

■ **Beginning this fall, companywide privacy training** for employees is scheduled to begin.

■ **An audit program checks databases** against privacy practices.

HP Steels SAN Strategy

Buys StorageApps, plans iSCSI line

BY LUCAS MEARIAN

IN TWIN storage moves, Hewlett-Packard Co. last week announced an acquisition aimed at boosting its ability to manage multivendor storage-area networks (SAN) and said it will roll out a complete line of disk arrays and related products based on the emerging iSCSI standard by early next year.

The deal to acquire Bridgewater, N.J.-based StorageApps Inc. should make HP a more attractive player in the SAN arena by offering IT administrators tools to knit storage devices from various vendors into a single pool, said IT managers and industry pundits.

HP's bid for StorageApps, a maker of storage management software and appliances, is

valued at about \$350 million in a stock-swap transaction. StorageApps will become a wholly owned subsidiary of HP.

At least one IT professional sees the HP deal presenting a potential opportunity to exploit more of his company's storage capacity. Bryan Province, a senior systems analyst and storage administrator at Caterpillar Inc. in Peoria, Ill., said the industrial machine maker utilizes about 50% of its storage capacity now, using EMC Corp.'s storage management software. Province said he would like to expand that to 70% to 80% of storage capacity.

"We're looking at incorporating other vendors' products into our SAN ... to create a heterogeneous SAN," he said. "And it would be a timesaver to go to a single tool to be able to manage our storage."

Ron Johnson, an analyst at Evaluator Group Inc. in Greenwood Village, Colo., said the

deal will give HP far more mature storage management software than it currently offers, placing it ahead of rivals such as IBM and Compaq Computer Corp. "This will shake up IBM and Compaq," said Johnson. "I don't see that IBM or Compaq has an appliance that does this."

The StorageApps purchase will also give HP the lead in storage virtualization capabilities, which allow users to pool and reallocate disk capacity from different arrays, said Johnson. That's emerging as one of the hottest applications in the storage management market, he said, because it enables users to more fully utilize their storage resources and get more bang for their storage buck.

HP offers storage virtualization software for some of its disk arrays, but it lacks an enterprise-level product to support devices made by multiple storage vendors. Both IBM and Compaq are expected to roll

out storage virtualization offerings for multivendor SANs later this year.

Meanwhile, HP disclosed last week that its planned iSCSI line will mirror the Fibre Channel-based storage devices that are sold under its Federated Storage Area Management product suite. That includes 15 to 20 disk arrays, storage networking switches, host bus adapters and other devices, HP officials said, adding that the iSCSI-based products should be ready by the first quarter of next year.

The iSCSI technology, also referred to as SCSI over IP, is aimed at allowing users to take

block-level SCSI data and wrap it in TCP/IP packets for transmission across the Internet. That enables end users on remote LANs to access corporate data via the Internet's basic communications protocol.

IBM began shipping some iSCSI-based storage devices in June. However, the Internet Engineering Task Force is still working to finalize an iSCSI standard, a process that's not expected to be completed until later this year. ▀

MOREONLINE

For more storage coverage, go to www.computerworld.com/storagecenter.

Spectrum Tussle Continues

NextWave offered \$5B to give up licenses

BY BOB BREWIN

Seven wireless companies have offered to pay NextWave Telecom Inc. as much as \$5 billion for its wireless licenses in a gamble to retain control of nationwide spectrum for which they bid more than \$15 billion in January.

Hawthorne, N.Y.-based NextWave originally won the licenses in a 1997 Federal Communications Commission auction, with a bid of \$4.7 billion, but failed to make full payment after seeking bankruptcy protection in 1998. After a protracted legal battle, the FCC said it had won the right to reacquire the licenses this January, even though NextWave still had a case pending in the U.S. Court of Appeals in Washington.

The FCC reacquired the NextWave licenses for a total of \$17 billion in a field of spectrum-hungry carriers ready to use the licenses to augment existing networks. Early last month, the appeals court ruled that the FCC violated bankruptcy laws by repossessing the licenses and ordered their return to NextWave.

NextWave quickly placed an order for more than \$100 million worth of equipment and announced plans to build out a

nationwide carrier that would sell wholesale airtime to other carriers.

Still eager for the NextWave spectrum, the wireless companies that had won major chunks of nationwide spectrum in the January auction last week proposed a settlement that would pay NextWave up to \$5 billion for its spectrum.

The companies are Alaska Native Wireless LLC in Fairbanks, Alaska, which partnered with AT&T Wireless Services Inc. in the auction; Dobson Communications Corp. in Oklahoma City; Chevy Chase, Md.-based Salmon PCS LLC, which partnered with Atlanta-based Cingular Wireless; Verizon Wireless in Bedminster, N.J.; and VoiceStream Wireless Corp. in Bellevue, Wash.

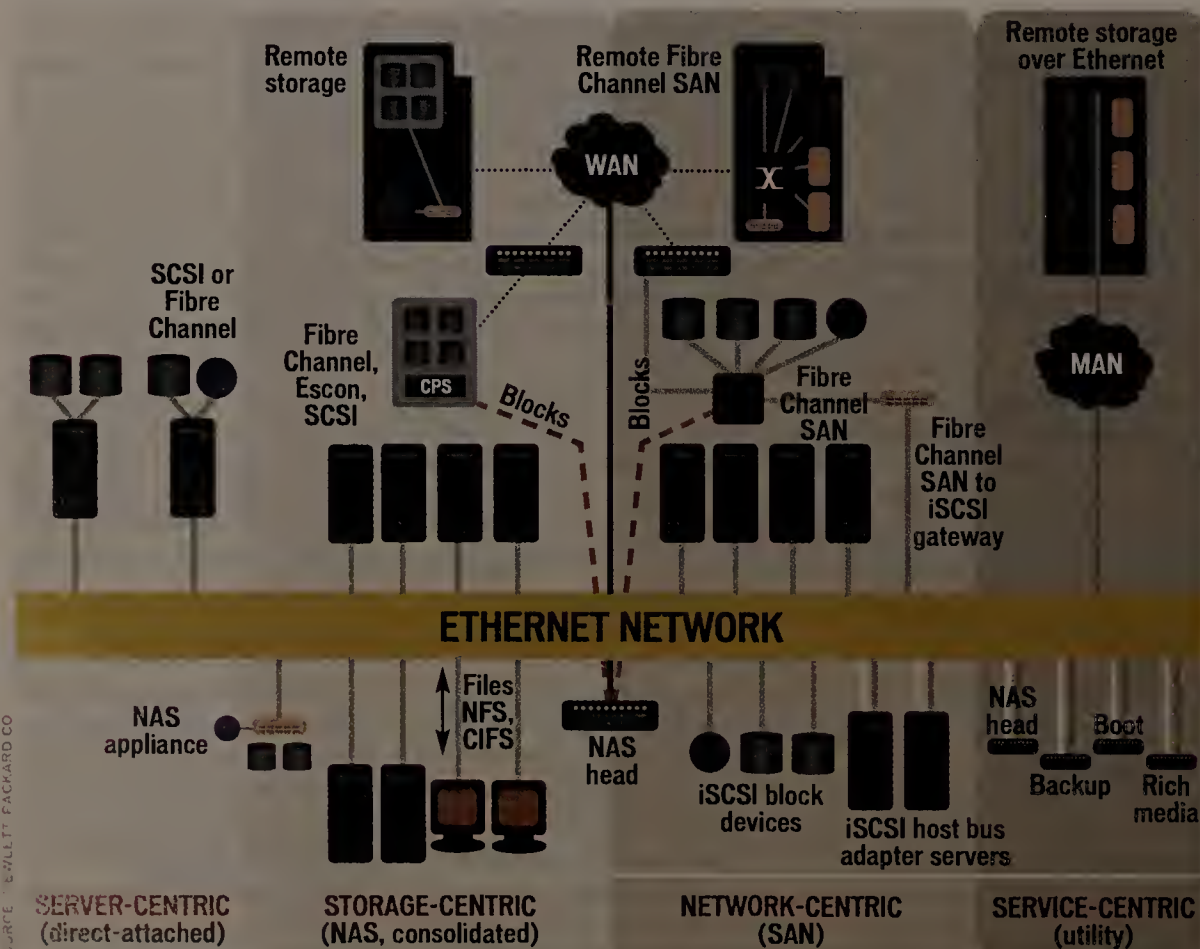
In a letter to FCC Chairman Michael Powell that was publicly disclosed last week, the wireless carriers proposed that they collectively pay NextWave between \$4 billion and \$5 billion out of the \$15 billion they had bid at the auction. This would then leave between \$10 billion and \$11 billion that the carriers would pay to the FCC.

Neither the FCC nor NextWave publicly commented on the offer by deadline. ▀

MOREONLINE

For more on wireless technology, visit www.computerworld.com/wirelesscenter.

Proposed HP Federated Storage-Area Management

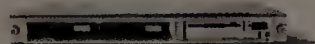


100% PURE COMPAQ.
BECAUSE IN THE LONG RUN,



A CHEAP IMITATION IS NEITHER.

\$0 down, 0% lease on select Compaq ProLiant Servers before September 30. Why buy a cheap imitation when you can have the real thing? Only Compaq can provide your business with the reliability and service that has made us #1 in customer satisfaction[†]. Designed with your business — and budget — in mind, these ProLiant Servers are long-term investments that pay off right away. And with a great lease offer like this, there's just no reason to settle for second best.



ProLiant DL360 Server

\$96 per month¹

\$0 down, 0% lease for up to 30 months²

Buy it for \$2869*

QuickAccess Code: N7X723-17353

Intel® Pentium® III processor 1.00GHz, 256K cache

18GB Pluggable Ultra3 SCSI hard drive³

128MB PC 133MHz ECC SDRAM (exp. to 4GB⁴)

1U⁵ form factor

Dual processor capable

3/3/3 parts, labor, and on-site warranty⁶

■ Network Magazine Product of the Year 2001

Optional Upgrades: Remote manageability including lights-out capability



ProLiant ML370 Server

\$116 per month¹

\$0 down, 0% lease for up to 30 months²

Buy it for \$3469*

QuickAccess Code: N7X723-16654

Intel Pentium III processor 1.13GHz, 512K cache

18GB Pluggable Ultra3 SCSI hard drive³

256MB PC 133MHz ECC SDRAM (exp. to 6GB⁴)

5U⁵ form factor (Tower available)

Dual processor capable

3/3/3 parts, labor, and on-site warranty⁶

Optional Upgrades: On-line spare memory, redundant hot plug fans, hot plug PCI and power supply



ProLiant DL380 Server

\$131 per month¹

\$0 down, 0% lease for up to 30 months²

Buy it for \$3919*

QuickAccess Code: N7X723-16754

Intel Pentium III processor 1.13GHz, 512K cache

18GB Pluggable Ultra3 SCSI hard drive³

256MB PC 133MHz ECC SDRAM (exp. to 6GB⁴)

2U⁵ form factor

Dual processor capable

3/3/3 parts, labor, and on-site warranty⁶

Optional Upgrades: On-line spare memory, redundant hot plug fans, hot plug PCI and power supply

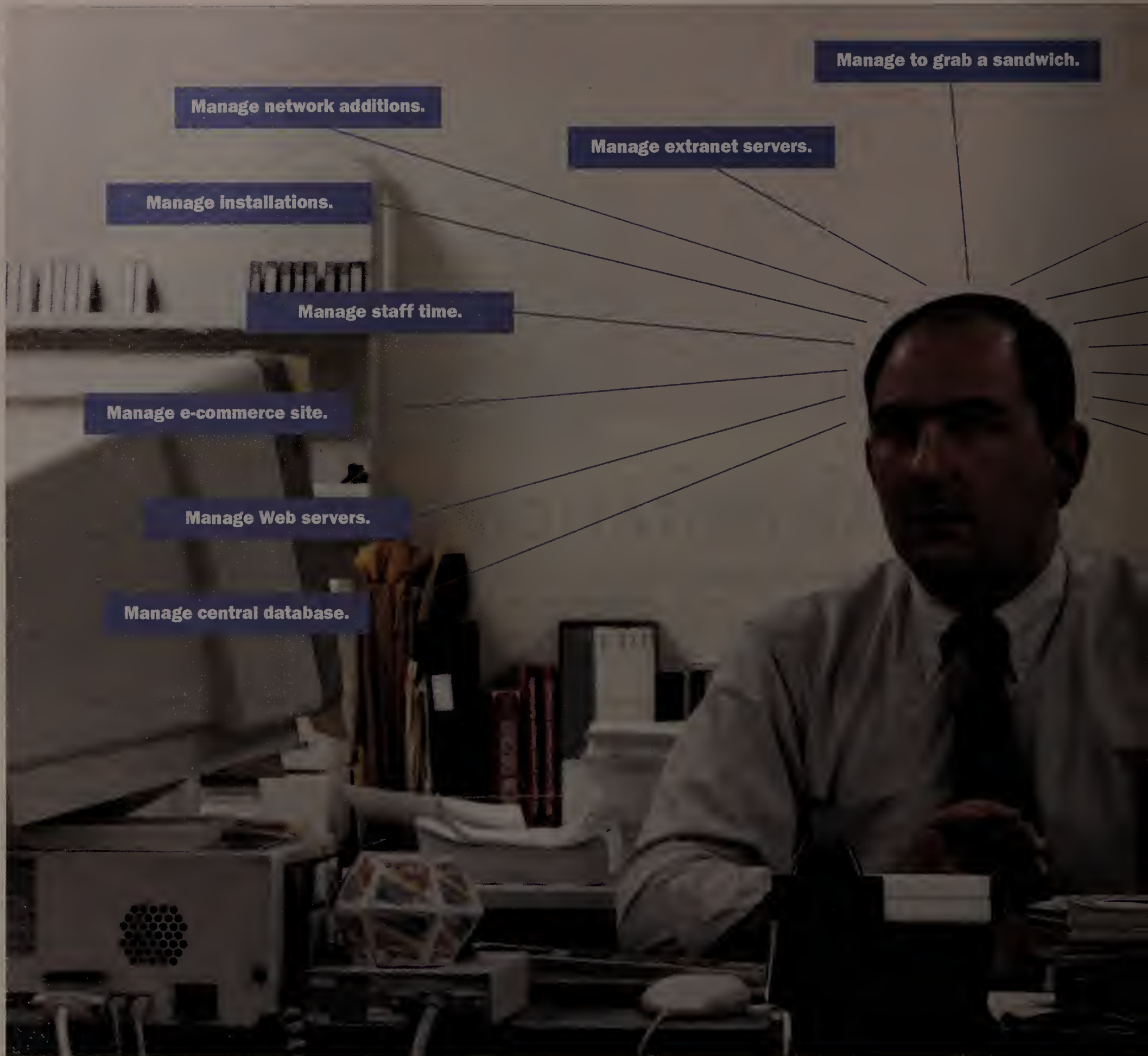


To buy direct or for your nearest reseller

1-888-518-6209 compaq.com/purecompaq
toll-free

COMPAQ
Inspiration Technology

*Prices shown are Compaq prices; reseller and retailer prices may vary. Prices shown are subject to change and do not include applicable state and local sales tax or shipping to recipient's destination. ¹Based on Technology Business Research, Inc. (TBR) Q1 2001 Corporate IT Buying Behavior and Customer Satisfaction Study: Intel Servers. ²The monthly lease payments shown are based on the Compaq purchase prices and 30-month lease terms. Monthly lease payment will vary if reseller or retailer prices vary or lessee requests a lease term at less than 30 months. Financing available through Compaq Financial Services Corporation (CFSC) to qualified commercial customers in the U.S. Financing is subject to credit approval and execution of standard CFSC documentation. Other restrictions may apply. CFSC reserves the right to change or cancel this program at any time without notice. These programs cannot be combined with any other special discounting without Compaq's permission. ³This \$0 down, 0% lease offer is a lease with a fair market value purchase option at the end of the lease term. The monthly lease payments are calculated at a 0% implicit lease rate, assuming lessee does not exercise a purchase option at the end of the lease term and timely returns the leased equipment to CFSC at the end of the lease term and disregarding any charges payable by lessee other than rent payments (such as taxes, fees, and shipping charges). ⁴For hard drives, GB=billion bytes. ⁵1U=1.75-in. ⁶Certain restrictions and exclusions apply. Consult the Compaq Support Center for details. Three years on-site and labor not available in all countries. ©2001 Compaq Computer Corporation. All rights reserved. Compaq, the Compaq Logo, and ProLiant are registered trademarks of Compaq Computer Corporation. Inspiration Technology is a trademark of Compaq Information Technologies Group, L.P. in the U.S. and other countries. Intel, the Intel Inside Logo, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other products mentioned herein may be trademarks of their respective companies. Compaq is not liable for editorial, pictorial, or typographical errors in this advertisement. 9697A/07/01



We've made the Windows 2000 platform more manageable than ever. For obvious reasons. Clearly, you have a lot on your mind these days. But now there's help: Microsoft® Windows® 2000-based management solutions are designed to simplify your workload. Companies such as Data Return, Eaton Corporation, and Northrop Grumman Corporation, working with service partners such as Compaq, are using these solutions today. As a result, they're realizing reduced IT management costs, higher profitability, and increased customer satisfaction. For more information on how to better manage your Windows-based infrastructure, visit microsoft.com/business **Software for the Agile Business.**



Manage intranet servers.

Manage my manager.

Manage legacy desktops.

Manage new desktops.

Manage costs.

Manage remote users.

Manage the bottom line.

Active Directory™ service and Group Policy features in the Windows 2000 Server Family simplify management, strengthen security, and extend interoperability across both users and devices.

Application Center 2000 provides integrated tools for deployment, management, and monitoring of Web applications, making the management of Web server farms as simple as managing a single server.

Microsoft® Operations Manager 2000 provides an enterprise-class event-management and performance-management tool for the Windows 2000 Server Family and Microsoft .NET Enterprise Servers.

Systems Management Server 2.0 provides comprehensive hardware and software inventory, enterprise software distribution, remote control, and software metering for Windows-based desktops and servers.

Microsoft®

BRIEFS

Sun Boosts High End

Sun Microsystems Inc. last week announced an enhanced version of its high-end E10000 server and said it has cut prices on an earlier model. The company said the high-end system, known as Starfire, uses 466-MHz chips. Sun also said it's cutting system board prices by up to 15% on the 400-MHz UltraSPARC II-based line of Enterprise servers, including the E10000.

AOL Instant Messages Near Interoperability

America Online Inc. says it's close to releasing an interoperable version of its Instant Messenger and ICQ real-time chat services. In a report filed with the Federal Communications Commission, Dulles, Va.-based AOL said it's testing server-to-server interoperability and is on track to test its instant messaging system with other services by the end of the summer.

Health Care IT Groups To Merge in January

The Healthcare Information and Management Systems Society (HIMSS) and the Center for Healthcare Information Management (CHIM) plan to merge in January. Chicago-based HIMSS is made up mainly of IT executives. Most of the members of Ann Arbor, Mich.-based CHIM are health care vendors.

CA Financials Vary

Both fans and critics of Computer Associates International Inc. could find something to like about the software vendor's latest financial results. Under a new accounting method, the Islandia, N.Y.-based company last week reported net operating income of \$323 million for the quarter ended June 30, up 61% from the year-earlier level of \$201 million. But based on its historical reporting procedures, CA posted a loss of \$342 million, compared with a \$21 million profit a year earlier.

Ford Gets Help With Global Supply Chain

Automaker taps Virginia firm to handle crucial import/export and customs tasks

BY MARC L. SONGINI

WHILE THE benefits of a global supply chain can be substantial, the logistical headaches it can produce can be just as plentiful. So Ford Motor Co. has decided to let someone else deal with those headaches.

Last week, the automaker said that it's replacing internal legacy customs and trade applications with hosted ones from Dulles, Va.-based Vastera Inc. to handle global trade operations among its internal parts suppliers.

Vastera is already handling import and export processes, customs clearance, trade regulation compliance and shipping cost calculations.

That a giant like Ford is turning over such crucial supply chain processes to a third party is remarkable, given how challenging it can be to comply with various international shipping regulations and how critical it is to keep parts moving without delay, said analysts.

There are an infinite number of specific rules and regulations that are country-, product- and destination-specific. They are constantly changing and require frequent software updates to ensure compliance, said Jill Jenkins, an analyst at Current Analysis Inc., a consultancy in Sterling, Va. Violations of these rules can amount to \$1 million in fines and other penalties, she said.

Long-Term Goals

Ford has already gone live with Vastera's Web-based applications for shipments to Mexico and Canada. The company plans to continue rollouts for other processes and coun-

tries, said Aleks Kobylecki, Ford's manager of global customs.

Among the applications that have gone live is one that handles the classification of parts for customs purposes.

"Ford has a universe of parts that are constantly evolving," Kobylecki said.

The automaker expects to see \$1.4 billion in savings on duties paid through its global

supply chain using Vastera. Kobylecki said Ford has complete trust in Vastera's long-term viability, but he added that there is a contingency plan in case the firm goes belly up.

At FedEx Express, a subsidiary of Memphis-based FedEx Corp., automated processes have helped the company preclear 90% of its U.S.-bound

international shipments before the planes land, said Mark Turner, managing director of

customs brokerage operations.

FedEx offers a variety of customs processes to speed up services to its global supply chain clients. Without the company's mix of homegrown and third-party applications, "we could not begin to do what we do," Turner said.

FedEx started crafting the applications back in 1984 with

a push into international services. Originally, the firm relied on manually processing much of the paperwork, he said.

"Our volumes are such that if we didn't do prefilling well in advance of arrival into our hubs, customs would not be

able to process our shipments as quickly as they do now," said Turner. ▀



TURNER: FedEx relies on third parties for customs help.

U.K. Financial Firm Hands Routine IT to CSC

BY JULEKHA DASH

Following the recent sale of its investment banking division, London-based asset management firm Schroders Holdings PLC found itself with such a thinned-out staff that it made more sense to ship out many of its routine IT operations than it did to keep them in-house.

As Schroders and Computer Sciences Corp. iron out a detailed service-level agreement following the seven-year, \$240 million IT outsourcing deal they struck last month, 200 Schroders employees are getting ready to move to CSC.

The decision to outsource will allow Schroders to "get

economies of scale in generic areas of technology," in light of the May 2000 sale of its investment banking division to Salomon Smith Barney Holdings Inc., said Lester Gray, Schroders' chief operations officer. After the sale, half of Schroders' 3,000 employees were shifted over to New York-based Salomon Smith Barney, which raised the cost of deploying technologies such as Windows 2000, he explained.

The El Segundo, Calif.-based outsourcing firm will manage infrastructure and application services, including desktop computing, help desk and support of some legacy back-office systems, according to Gray. He said the company "expects to see meaningful savings" within three to five years, though he wouldn't provide specific projected figures.

"Continuing consolidation in the European banking industry will drive [more] outsourcing" deals, said Albert Nekimken, an analyst at Input, a market research firm in Chantilly, Va. The advent of the euro is also likely to spark such deals, because banks need to convert

accounts and IT systems to accommodate the new currency, he said.

In its service-level agreement with CSC, Schroders said it plans to define about 100 service metrics, such as network performance, that need to be met and reported on a monthly basis. The agreement will call for financial penalties if those levels aren't met, said Gray.

Schroders is also discussing an outsourcing deal with CSC for several of its Asian operations, said Gray. But if the company decides to outsource IT in Asia, it will be on a smaller scale than its U.K. contract, he said.

As the outsourcing trend grows, financial services companies have to be careful about what they hand off to outside firms, said Michael Mah, a consultant at Arlington, Mass.-based Cutter Consortium.

In some financial services areas, such as proprietary trading applications and asset management software, IT is "the brains of the operations," so companies must be careful "not to give away the family jewels," he said. ▀

Outside Help

Worldwide spending on IT outsourcing will top \$100 billion by 2005, up from \$56 billion last year, according to IDC.

The top markets include the U.S., which will account for 44% of global outsourcing spending by 2005, and Western Europe, where spending on outsourcing will reach \$26 billion by 2005.

SOURCE: IDC, FRAMINGHAM, MASS.

Turns out, time is still money:

As the contact center specialists, we know how to trim new service

IMPLEMENTATION FROM WEEKS TO DAYS.

76% OF THE FORTUNE 50 USE ASPECT.

One of our clients saved over \$1,000,000 using our contact center solutions—handling 16% more contacts without adding a single employee.

case studies: www.aspect.com/go/trimweeks

1-888-412-7728



ASPECT

The Contact Center Specialists

Continued from page 1

Boeing

The big challenge for IT is the short timetable, said Robert Paul, executive director of shared services at Boeing's world headquarters group and the manager heading up the Chicago headquarters project.

"We're doing design, build and start-up pretty much all at once. Most sane people would not do it this way," Paul said, explaining that the relocation team had to do it all at once to meet the company's strict relocation schedule. "The short time cycle makes it intense."

The Chicago office will be home to top management, including CEO Phil Condit.

Getting a Head Start

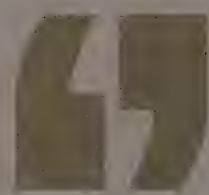
The relocation team took some steps toward setting up the new IT infrastructure well before Chicago was chosen as the new headquarters site, said Boeing spokesman Robert Jorgensen.

Boeing announced in April that Chicago, Denver and Dallas/Fort Worth were all in the running. Jorgensen said Chicago got the nod because it's centrally located and an international business hub with good air travel connections to Europe, Asia and Latin America.

"Even before Chicago was selected, we had examined and picked possible office facilities in all three cities," said Paul

Kraus, senior manager of network services at Boeing's facilities in St. Louis. That gave Boeing a head start on designing a generic infrastructure that could be adapted to any of those facilities, Kraus added.

Having people in-house with the right skills also helped jump-start the project, Jorgensen said. Paul, for example, directed the creation of Boeing's Leadership Center, a management education complex in St. Louis that opened in 1999.



We're doing design, build and start-up pretty much all at once. Most sane people would not do it this way.

ROBERT PAUL, BOEING EXECUTIVE DIRECTOR, SHARED SERVICES



Ronald Pfaff, also from the St. Louis office, has office operations expertise support, and Kraus is one of Boeing's top network gurus, said Jorgensen. Harry Williams, who will move from Seattle to Chicago with the headquarters staff, is very savvy about applications and systems integration, Jorgensen added.

Network equipment procurement began in May, Kraus said.

The network will include Catalyst 6500 switches and 7605 Series routers from Cisco Systems Inc., he said. The same units are used at other Boeing locations, and they are relatively easy to configure and maintain, said Kraus.

Users' computers, mostly laptops from Dell Computer Corp., will connect over Category 5 copper cables with one of 12 Catalyst 6500s in wiring closets on each of the facility's 12 floors. The floor networks will have 100M bit/sec. Fast Ethernet systems.

A Gigabit Ethernet connection running over optical fiber between floors will link the 6500s to a bank of two 7605

CHECKLIST

Boeing's Numbers

Equipment being installed in Boeing's new Chicago headquarters:

- Dell C600 laptop and Dell L400 Notebook computers - 300 on Day 1, 500 in the future - all with docking stations
- 300 18-in. flat-panel monitors on Day 1, 500 in the future
- 12 Cisco Catalyst 6500 network switches
- 2 Cisco 7605 routers
- 691,200 feet of optical-fiber cable
- 4,800,000 feet of Category 5 copper cable
- Lucent G3 PBX switch
- 650 Avaya telephones

routers, one of which will be used as a backup, Kraus explained (see diagram below).

Williams said there will be only a few special-purpose servers in Chicago, such as those running shared document printers.

The main applications servers, including those that host Microsoft Office applications, enterprise resource planning applications from PeopleSoft Inc. in Pleasanton, Calif., and other server-side programs, will reside at Boeing's Seattle and St. Louis data centers, said Wil-

liams. He explained that there's no need to duplicate in Chicago what's already up and running elsewhere.

The team acknowledged that there could be some latency issues in spite of the healthy bandwidth provided through 45M bit/sec. DS3 lines and dual 155M bit/sec. OC-3 lines leased from Sprint Corp. If latency is a problem, "we'll simply set up some local servers to compensate," said Pfaff.

The new phone system, with a G3 private branch exchange (PBX) from Lucent Technologies Inc. in Murray Hill, N.J., is a standard switched system.

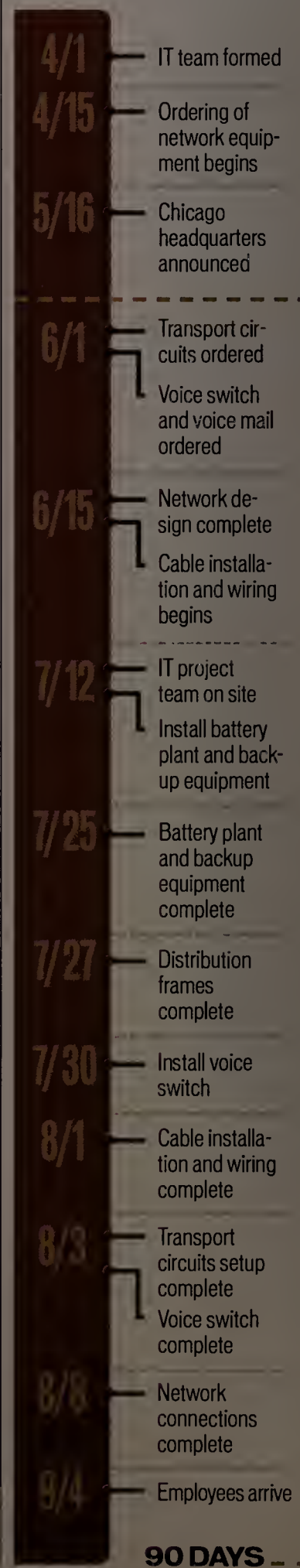
"We're staying away from voice over IP for the time being," Kraus said, citing reliability concerns. "The high-level people who'll locate to this office want a phone system that always works."

Williams said Boeing will address questions about issues like latency and system configuration through tests on a pilot network in St. Louis designed to emulate how Chicago will perform. The team declined to comment on costs associated with the relocation.

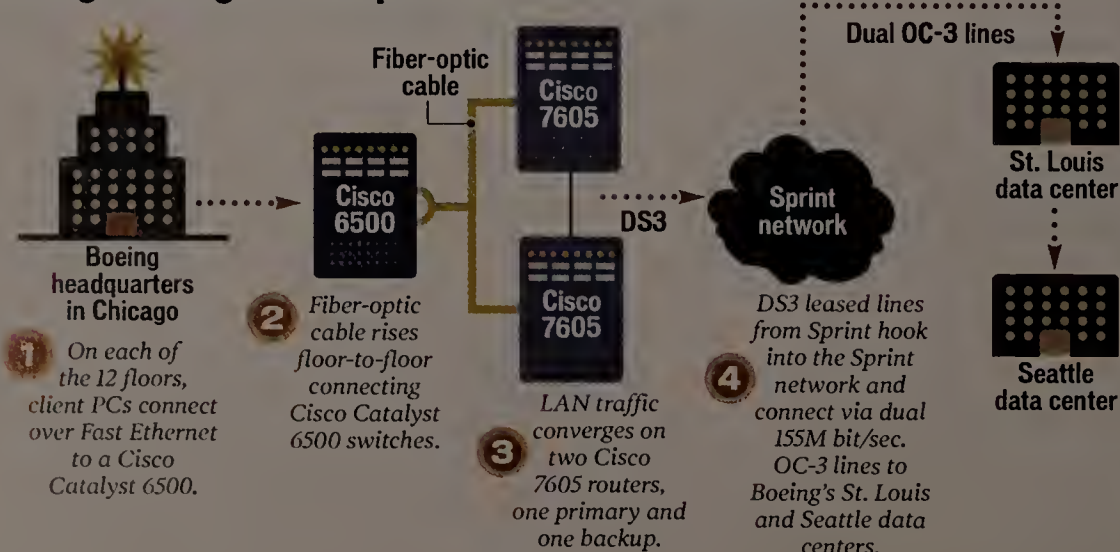
"Our goal [when the facility opens] is to have people walk in and say, 'Wow,'" Paul said. ▀

Project Time Line

Boeing's IT team set a 90-day agenda to make systems operational at the new headquarters.



Boeing Chicago Headquarters Infrastructure



Boeing, UPS Push Marketplace Links to Ease Procurement

Goal: integrated links to multiple exchanges

BY MICHAEL MEEHAN

Aircraft giant The Boeing Co. has begun the gritty detail work of building links to its chosen online public marketplaces and is pushing to make sure that this is an IT job it doesn't have to do more than once.

Efforts to create links among various marketplaces are under way and could lead to expanded usage of online procurement sites by corporations worldwide.

Seattle-based Boeing is nine months into a two-and-a-half-year integration project with online marketplace Exostar LLC in Herndon, Va. While it undertakes that work, Exostar is building links to other marketplaces such as Enporion Inc., a gas and energy exchange, and the regional markets operated by Deutsche Telekom AG and British Telecom PLC.

"That was a major criterion for selection for us," said Kristina Erickson, Boeing's director of venture relations. "It might not be something we can take advantage of immediately, but we fully expect to take advantage of a global network once we've got all our functionality in place."

"That's the win," said Gene Marshall, procurement group manager at UPS Air Cargo in Louisville, Ky. "You want to have one integration point rather than multiple integration points. Trying to build too many of these relationships would be a nightmare."

According to Erickson, Boeing has had to build a method of accessing 18 procurement systems in order to do business with Exostar.

Boeing has a polyglot of legacy procurement systems built by Baan Co., Oracle Corp. and WDS Technologies SA, in addition to some homegrown systems. Erickson explained

that the data from all 18 systems must be converted to XCBL terminology (a variant of XML created by Commerce One Inc.) and then pumped through the corporate firewall to Exostar.

Exostar currently performs the XCBL conversions for incoming messages, but Erickson said Boeing will eventually assume that responsibility.

Boeing started with a no-frills messaging gateway when it first connected to Exostar last fall. Now it has formed a "basic transportation" gateway to broker the messaging. The company plans to replicate that basic gateway twice more to create a "managed high-performance fleet" capable of handling procurement from the entire enterprise.

In addition, the business units in 54 locations that use the 18 procurement systems are being asked to change their rules and processes to route their procurement efforts through Exostar.

"That's what makes this a whole lot harder," Erickson

said. "If this was just installing technology, it would be a whole lot easier."

"It turns out, it's more difficult to do this than people expected," said Kevin Zhu, assistant professor of IT at the Graduate School of Management at the University of California, Irvine.

He said a translation layer such as the one Boeing is de-

veloping is "a worthwhile investment because you can't retire your legacy systems in most cases." Yet he said the real key for IT shops is identifying a core technology and set of standards that will be leveraged throughout a marketplace integration project.

Rowin Nance, senior manager of integration development and infrastructure services at

Deloitte & Touche LLP in Wilton, Conn., said companies starting down this road should look for out-of-the-box functionality rather than try to build such systems in-house. He added that back-end messaging products like IBM's MQSeries or Java Messaging Service create data security issues when they push information out to Web browsers.

"Essentially, you're looking for adapters with a rich set of features," he said. "Look for how that adapter handles things like errors and exception reporting, length and format of messages, how it caches messages."

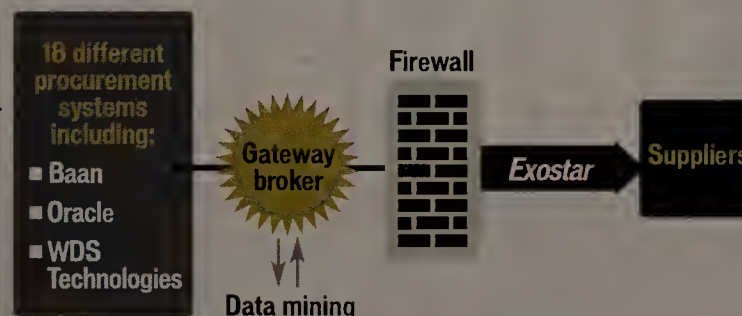
UPS Air Cargo is a founding member of the aviation industry exchange Cordiem LLC in Washington. Marshall said his company plans to start its participation in the marketplace through a simple browser-based link.

"Once we get some experience, we can decide how much integration and participation we want," he said.

The airline has undertaken a one-month IT effort to enable the firm to run online auctions for goods and services through the Cordiem exchange. ▀

Boeing Reaches 18 Marketplaces Through a Single Exostar Gateway

Boeing has managed to take 18 legacy procurement systems, pump their data through an XML-translation and message-routing gateway and then out to its chief public marketplace partner, Exostar LLC. At that point, it hopes to be able to perform online transactions with any Web-enabled supplier on the planet.



Users Must Drive Business-to-Business Standards, Says Commerce One President

In April, former FedEx Corp. CIO **Dennis Jones** joined the executive team at Pleasanton, Calif.-based business-to-business software vendor Commerce One Inc. as chief operations officer. Just two months later, he became the company's president.

Now he's preaching the gospel of online marketplaces to his former CIO colleagues.

Q: What persuaded you to join the vendor ranks after decades on the user side of the equation?

A: I think [Commerce One] can help companies, and it's challenging work. This whole intercompany space will be focused on the re-engineering process and changing the way companies present themselves. Companies as a whole are not a generic set of processes, functions and business practices.

It's going to be a lot of work to find commonality.

Q: How can users best function in the intercompany environment?

A: We find it works best when there's company buy-in. You have to make sure they're willing to re-engineer horizontal business practices rather than viewing this solely as an IT project hooking up to a set of vertical trading tools. Those processes are often independent from each other and silo-oriented, but the business must be merged with the technology if you want it to work.

Q: What's the chief IT hurdle for online marketplaces that you run into these days?

A: IT groups increasingly have to pay attention to standards on the XML side. Many companies are not

as quick to understand why standards are so important, but there has to be an acceptance of some basic standards when you go to undertake [e-business] projects. Customers are the ones who need to drive standards adoption.

Q: What do you as a vendor need to be better aware of in regards to your customers?

A: There's very little patience on the business side for long install times. I think the last of that patience was used up during the long installations of [enterprise resource planning] systems during the year 2000 work.

You have to remember, the average CIO lasts about 20 months on the job, so it's rather foolish to un-

dertake projects that are 24 to 36 months long.

Q: What are the IT impediments to joining multiple online marketplaces?

A: You cannot have a global trading Web if you have to build a different freeway for every marketplace. There must be seamless interoperability between marketplaces. We're trying to create the standards to make that happen. It has to address your security standards, your communications protocols, your data formats,

billing, service-level agreements. We're hoping to have those standards in place over the next year.

— Michael Meehan



DENNIS JONES: Interoperability between marketplaces is essential.

BRIEFS

Terra Lycos Taps IBM

Madrid-based Terra Lycos SA last week hired IBM for a two-year, multimillion-dollar hardware and support deal to replace equipment and software now supplied by Sun Microsystems Inc. and Compaq Computer Corp. Terra Lycos is trying to streamline operations by having one vendor for its worldwide operations, said company officials.

HP to Cut 6,000 Jobs

Hewlett-Packard Co. last week disclosed plans for its third round of job cuts this year, saying it will jettison another 6,000 workers due to a continuing slowdown in IT spending that's expected to push the company's fiscal third-quarter revenue as much as 15% below earlier projections. HP, which started the calendar year with a total of 88,500 workers, laid off 1,770 employees in January and another 3,000 in April.

10% of Staff Cut at i2

Struggling business-to-business and supply chain software vendor i2 Technologies Inc. said it's laying off another 10% of its workforce, or 587 workers, in an effort to become profitable. In April, Dallas-based i2 laid off more than 600 workers after its first-quarter profits came in nearly 50% below the year-earlier level.

Fix Posted for Unix Hole

A security hole discovered in a Unix-based operating system can allow remote hackers to gain complete access to or crash a Web server. According to an advisory issued last week by The FreeBSD Project, the vulnerability in the Telnetd program was shipped with all versions - except the forthcoming 4.4 release - of FreeBSD's open-source operating systems built on code developed by Berkeley Software Design Inc. Other Unix operating systems built on code from Colorado Springs-based Berkeley Software Design are also affected. A patch is available at www.freebsd.org.

Manual Security Procedure Aids Online Fraud Arrest

Web retailer's investigation of address discrepancy leads to credit card sting

BY DAN VERTON

SECURING SYSTEMS and guarding against online fraud is usually a technology-heavy process for companies. But human intervention can also play a role, as it did when ToolBarn.com Inc. put in place a new order verification policy that led to the discovery of an alleged ring of credit card thieves.

Dale Williams, president of ToolBarn, an online retailer of

power tools and construction supplies, said the sting and resulting arrests this month in New York originated with the retailer's policy of verifying with credit card holders any orders in which the billing address doesn't match the shipping address.

In this case, the billing information matched credit card records, but the order included a different shipping address from the usual one.

Williams said there were no

reports of lost, stolen or fraudulent activity on the card, nor did the order exceed the cardholder's credit limit. But when Omaha-based ToolBarn tried to call the phone number provided with the new billing address, the number turned out to be invalid, he said.

Possible Indicators

ToolBarn, a subsidiary of Omaha-based Tighten Co., got the cardholder's phone number from the bank that issued the credit card and contacted him at his home in New York, only to be told that the order was fraudulent. Williams said he then called the New York

City Police Department to alert it to the alleged crime. A sting and arrests followed.

Differences in shipping and information "does not necessarily indicate fraud, but it tells us that we need to validate the transaction with the cardholder and the issuing bank," Williams said. About 25% of the orders ToolBarn receives require such validation, he added.

A report issued last year by Stamford, Conn.-based Gartner Inc. concluded that credit card fraud is 12 times more common for online merchants than it is for their brick-and-mortar counterparts. ▀

Continued from page 1

Windows XP

"will make very little difference to corporate citizens," said Dan Kusnetzky, an analyst at IDC in Framingham, Mass.

George Odencrantz, IS director at Sinclair Oil Corp., agreed with that assessment. His company began deploying Windows 2000 on approximately 1,000 desktops last year; 10% to 15% are now on that operating system, and the Salt Lake City-based firm plans to ultimately move all of its desktops to Windows 2000.

Odencrantz said he believes the new features in XP are aimed at consumers, not corporate customers. "There is just nothing in it that is particularly important to us," he said.

In any case, Microsoft faces problems on two fronts.

First, the Senate Judiciary Committee last week said it plans to look at XP and other "competition" issues at a series of hearings beginning in September. This follows a lambasting by Sen. Charles E. Schumer (D-N.Y.) of Microsoft's "anticompetitive" strate-

gy to integrate instant messaging, media players and other functions with the operating system.

Schumer wants to put pressure on the states and the U.S. Department of Justice in their antitrust settlement talks with Microsoft to address XP, said legal experts. The message: "If Justice settles too cheaply... they are going to make a political issue out of this," said Robert Litan, a former deputy assistant attorney general of the antitrust division at the Justice Department.

Second, a coalition of privacy groups, including the Electronic Privacy Information Center in Washington, last week filed a deceptive-trade complaint with the Federal Trade Commission over Microsoft's identity-authentication service, Passport, which will be part of XP. The coalition alleged that the new system misleads consumers into believing they need Passport, while embarking on an "unprecedented" sharing of information and monitoring of users.

"It's Microsoft's market power, which enables it to unfairly obtain personal information of such a great number of

X Marks the Spot

Windows XP faces new challenges:

Congress Lawmakers will hold hearings in September on XP. The real goal may be to put pressure on the Justice Department to reach a tough settlement.

FTC An FTC complaint by privacy groups against Microsoft's Passport authentication service, which is included in XP, is a wild card. The FTC could reject it or seek remedies.

IT Impact Analysts say end users are focused on Windows 2000, not XP, whose planned October release has been timed to make it available to consumers for the holidays.

consumers, that puts it in a unique and dangerous position," said Jason Catlett, who runs Junkbusters Corp., a privacy advocacy organization in Green Brook, N.J.

Microsoft officials stressed that end users don't need Passport to use XP and said customer data has strict privacy protections. "Passport does not and will not use data for any secondary purposes," said spokeswoman Tonya Klause.

But unlike Congress, the FTC can conceivably take action that affects XP if it agrees with the complaint. It could seek a consent decree or a voluntary agreement, or it could move for a formal administrative hearing, said experts.

XP, however, will be on its way to PC makers in a matter of weeks, and Microsoft says it has no plans to change its release schedule. "We are focused completely on delivering XP on time, and we are on schedule for the Oct. 25 launch date," said Jim Cullinan, a company spokesman.

XP's release is timed for the holiday season, and a delay would have an overall market impact on PC makers and others in lost revenues of anywhere from \$4.5 billion to \$9 billion in hardware, software and PC accessory costs, said Rob Enderle, an analyst at Giga Information Group Inc. in Cambridge, Mass.

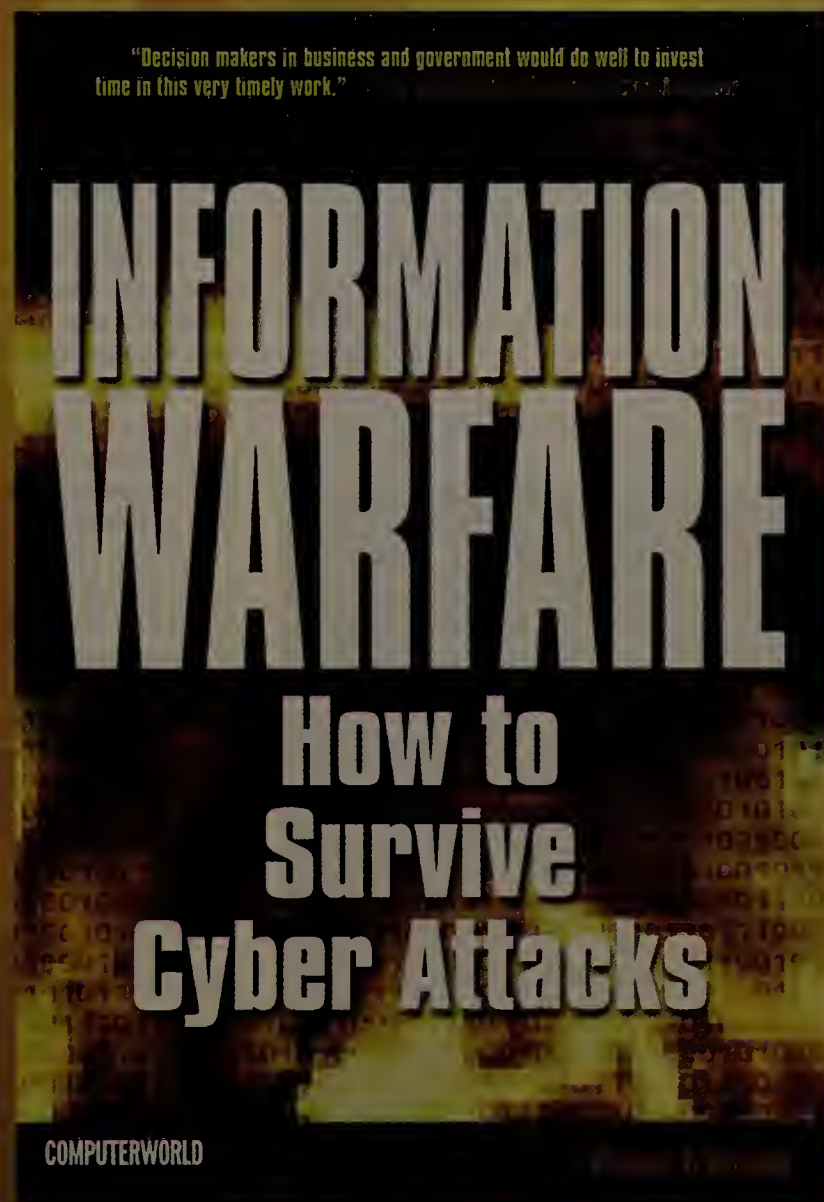
"It would clearly make the [current economic] downturn much deeper and much more painful," he said. ▀

MORE THIS ISSUE

Our reviewer finds Win XP surprisingly stable. See page 50.

EVERYBODY'S CONNECTED. NOBODY'S SECURE.

Defend against hackers
and other forms of cyber
crime using the strategies
inside this insightful and
revealing resource



Information Warfare:
How to Survive Cyber Attacks
MICHAEL ERBSCHLOE
\$29.99
0 0 0 0 0 0 0 4

"Erbschloe's practical
suggestions for action are
impeccable. Highly
recommended reading for
all who wish to be
competitive now and in
the years to come."

—Pam Dixon, *award-winning
author, columnist, and syndicated
radio show host*

Available at online retailers and bookstores everywhere

**Mc
Graw
Hill**

OSBORNE
www.osborne.com

Part of Computerworld's Books for IT Leaders Series

COMPUTERWORLD

Financial Firms Fret Over Costs of State Privacy Rules

Patchwork of laws could force database, other changes

BY PATRICK THIBODEAU

CALIFORNIA LAWMAKERS have moved closer to supplanting financial privacy provisions set in federal law with a more restrictive set of rules, a step that has implications for IT managers nationwide who must ensure that their systems can cope with state-by-state variations in data-sharing requirements.

That's no small task. Financial services firms that have already spent millions of dollars to comply with the privacy provisions of the federal Gramm-

Leach-Bliley Financial Services Modernization Act, which took effect July 1, now face the prospect that individual states may change their privacy rules.

"Hypothetically, we would have to come up with 50 different databases for 50 different laws," said Jim Garavaglia, senior vice president and chief privacy officer at Comerica Inc., a Detroit-based financial services firm.

The proposed California law differs from Gramm-Leach-Bliley in two key respects. First, it gives consumers the ability to "opt out" of having confidential data held by their financial services

providers to be shared with those providers' affiliated firms. The act allows data sharing between affiliates without consumer consent. Second, the proposed state law requires "opt-in" — active, rather than passive, consent by consumers — for firms that want to sell or share customer data to unaffiliated third parties. The federal law requires an opt-out provision for third parties only.

Complying with the federal law was costly for many firms. For instance, Columbus, Ohio-based Nationwide Financial Services Inc. spent between \$6 million and \$10 million to comply with the law, according to Kirk Herath, the company's chief privacy officer. The cost covered everything from mailing out privacy notices to systems changes, he said.

Herath said additional changes to privacy rules could cost millions of dollars more and change the company's business models. Insurers such as Nationwide separate risks within affiliates; for example, someone with a good driving record may get a policy issued by one affiliate, while someone with a bad record may be handled by another affiliate. A customer may deal with one insurance agent, but restrictions on data sharing between affiliates could hinder that customer interaction, Herath said.

If California's law triggers nationwide changes, new systems would be needed to handle those privacy restrictions, he said. "I can't see where it would be any less complex than what we just went through" to comply

An Opt-In First

California's Financial Information Privacy Act was sponsored by state Sen. Jackie Speier, a Daly City-based Democrat. It has won state Senate approval, but it still needs committee review and a floor vote by the Assembly, as well as the governor's approval.

What the bill would do: This is the first "opt-in" privacy bill, requiring active consumer consent for certain data sharing by financial institutions, that has a shot at passage. In contrast, federal regulations call for only the "opt-out" capability — that is, consumers must be given the opportunity to bar sharing of their personal data.

IT impact: Any financial services firm that does business in the state would have to comply, forcing many to revamp IT systems.

with Gramm-Leach-Bliley, said Herath.

Privacy watchers said California's backlash toward Gramm-Leach-Bliley is due in part to privacy notices sent out by financial institutions that were in many cases difficult for consumers to comprehend or offered few privacy protections on data sharing. The notices have been a "public relations and customer relations disaster for the banks," said Evan Hendricks, editor and publisher of "Privacy Times," a Washington-based newsletter.

Gramm-Leach-Bliley doesn't prevent states from setting their own rules. If California and other states go that route, pressure will be put on Congress to preempt state rule-making. "If it breaks down in the states and there is a chaotic situation that develops, Congress will have very little option but to preempt state law," said Michael Lovendusky, senior counsel at the American Council of Life Insurers in Washington. ▀

Integrated Systems Aid Privacy Law Compliance

Many financial services firms have expressed concern that states will adopt their own privacy rules, creating a patchwork of regulations. A company's ability to deal with such changes would likely depend on how well integrated its systems are.

Firms with disparate databases face greater obstacles in adapting to regulatory changes, said analysts and end users.


"If you were designing a system today with privacy in mind, you would want . . . a common platform for your data," said Dan Rainey, director of IT services at insurance group Amerisure Cos. in Farmington Hills, Mich.

It's also important for IT managers to work with the business side of the company

so they can stay abreast of regulatory issues, said Rainey. "If you don't have a good relationship with your general counsel, you should get one," he said.

But the feared legal patchwork hasn't yet materialized. Aside from California's privacy bill, regulatory initiatives in other states have made little progress. There were 549 privacy bills introduced in 49 states this year, but only a handful were approved. According to the Internet Alliance, a trade association in Washington, most of the bills that have been approved deal with government Web sites. Financial privacy opt-in bills have been introduced in 14 states, but none has passed.

— Patrick Thibodeau



Soon the red light districts
will take on a whole new meaning.

From the leader in open source technology comes the
world's foremost open source conference.

redhat TECHWORLD BRUSSELS
September 17-18, 2001

Smart-Card Technology May Have a Smarter Rival

NYCE plans to use less-costly teller machine specification, networks

BY LUCAS MEARIAN

A new software specification promises to save banks months of time that would otherwise be spent reconfiguring their Web servers and databases to handle online payments.

NYCE Corp. is gearing up to launch the technology for secure online shopping, claiming that it will compete strongly against smart cards because it will use automated teller machine (ATM) networks, is cheaper for merchants and doesn't require member banks to install any software.

The Woodcliff, N.J.-based electronic-payments network company plans to offer its SafeDebit cards to its more

provides ATM and other financial services to Northeast financial institutions that represent approximately 45 million cardholders.

SafeDebit technology works by using a system that requires two tokens: a CD, and a password or personal identification number (PIN).

When an online shopper is ready to pay for merchandise, he clicks on a SafeDebit icon that prompts him to place the CD in the computer's drive. An applet then asks for the user's PIN.

The merchant then retrieves the encrypted data on the card, and the entire transaction goes to the payment processor, which routes it through the debit card network to the issuing bank.

The bank then approves or denies the purchase, based on the cardholder's account balance, and sends that authorization back to the merchant through the same ATM network.

"We wanted zero to minimum infrastructure changes for banks," said Humayun. "We wanted them to use legacy platforms. All the changes needed to support this transaction are being supported by payment or ATM processors that are already familiar with the technology."

A test transaction routed over a T1 line through three continents took less than 10 seconds, Humayun added.

Setting New Standards

Earlier this month, Foster City, Calif.-based Visa International Inc. went public with its new technical specification to support payment authentication services for online credit card transactions worldwide.

Visa International's new 3-D Secure 1.0 allows Visa cardholders to make secure online purchases using digital certificate technology, but the service requires both banks and merchants to install software.

For Fleet Credit Card Services in Horsham, Pa., installing Visa's payment specification was an eight-month process that included adding Web servers both on-site and off-site for redundancy and backup capability. For merchants, the installation generally takes less than three weeks, according to Visa.

MasterCard International Inc. and American Express Co. have each released silicon-chip-embedded smart-card technology that can encrypt online transaction data but requires that

the consumer and the merchant install a special card reader.

Ken Kerr, an analyst at Gartner Inc. in Stamford, Conn., said the most limiting

factor with SafeDebit is that it's designed for Internet purchases only. To shop at brick-and-mortar stores, you need a debit card, "whereas a smart card can be used for Internet [shopping] and, eventually, for in-store purchases," Kerr said. ▀



NYCE's SAFEDEBIT card fits in a regular CD-ROM drive and doesn't require new software to be installed, the company says.

than 2,300 member banks, credit unions and other financial institutions this fall.

The technology allows an online shopper to use a mini-CD that works on a standard CD-ROM drive to authenticate a purchase on a merchant's Web site.

Merchants can either code their own software or hire merchant payment software developers to do it for them in order to conduct the SafeDebit transactions.

"What we did was take the ATM infrastructure and plant it on the Internet, but at the same time, we highly encrypted the [personal identification number]," said Jehan Humayun, strategic analysis manager at NYCE, which



The services and training to give you lots of confidence. How you use it is your business.

Whether it's riding a bull or moving your IT infrastructure to the open source technologies, confidence can make people do some pretty amazing things. Red Hat expertise can give you the confidence you need to leverage the power of open source. How?

Whether it's riding a bull or moving your IT infrastructure to the open source technologies, confidence can make people do some pretty amazing things. Red Hat expertise can give you the confidence you need to leverage the power of open source. How?

Add our platform technologies and Red Hat Network and you have an end-to-end solution from the global leader in open source technology. It's how we give you the confidence to do, well, just about anything.

- The power of our specialized Linux and embedded Engineering Services
- Our enterprise-class network infrastructure consulting
- Our rapid-response "developer-to-developer" tech support
- And, of course, industry-leading training, from Apache™ administration to RHCE™ certification

For more information, visit our website at www.redhat.com or call 1-800-540-6070. Today, get a free copy of our new book, "Linux in a Nutshell". It's yours to read and keep today at: www.redhat.com/books/re/linux-in-a-nutshell



Red Hat is at the Bay Area Linux Expo, Booth 653. Open House: 10:30 AM - 5:00 PM. Sep. 17-18.

BRIEFS

Lucent to Cut 15,000 To 20,000 More Jobs

Lucent Technologies Inc. last week posted a \$1.89 billion loss for its third quarter and said it will cut 15,000 to 20,000 more employees in an effort to become profitable. The Murray Hill, N.J.-based company said it will take a \$7 billion to \$9 billion charge in the fourth quarter related to job and product cuts and asset write-offs.

Compaq Posts \$279M Loss as Sales Fall

Compaq Computer Corp. last week reported a \$279 million second-quarter loss, as the company's revenue declined sharply on a year-to-year basis. Compaq said the second-quarter results include a \$493 million restructuring charge to pay for new layoffs that were announced along with a reduced-expectations warning earlier this month. Net income from operations totaled \$67 million during the quarter, compared with a \$388 million profit in the same period a year ago, Compaq said.

IBM Moves Linux Onto iSeries Servers

IBM said last week that it's offering Linux on its iSeries servers. The initiative began with beta-testing of the open-source operating system using versions made by Germany-based SuSE Linux AG and Brisbane, Calif.-based Turbolinux Inc.

Short Takes

Houston-based **BMC SOFTWARE INC.** finished the quarter ended June 30 with revenue of \$339 million, down 7% from the same period last year. . . . German regulators are investigating a downward revision of **SAP AG's** net profit report for the first half of the year, a spokeswoman at Germany's Federal Supervisory Office for Securities Trading said last week.

Sun, HP Advance Open-Source Cause

Companies begin movement to further collaboration and aid in upcoming projects

BY TODD R. WEISS

SUN MICROSYSTEMS Inc. and Hewlett-Packard Co. are turning to developers in the open-source community for help on key future technology projects.

At the O'Reilly Open Source Convention in San Diego last week, Sun said it will open the code to its Grid Engine distributed computing software. And in a separate announcement at the event sponsored by Sebastopol, Calif.-based O'Reilly & Associates Inc., HP said it will

open its CoolTown initiative to open-source development.

Sun's Grid Engine project was designed to let large organizations link thousands of computers to collaborate on large-scale computing projects, essentially doing the work of a supercomputer.

"With distributed computing, there are lots of systems from different vendors working together, and you need heterogeneous environments," said John Tollefsrud, a product line manager at Sun. "This is the kind of technology space

that just lends itself to open source very well. Developers can work at the source level to make sure things interoperate."

Sun acquired the technology that it renamed Sun Grid Engine last July, when it bought San Jose-based Gridware Inc. About 500,000 lines of code from Grid Engine will be available for download.

HP anticipates that its CoolTown software will eventually allow users to link all kinds of computing devices to others via the Internet.

CoolTown uses standard bar codes and hardware receivers as so-called beacons to transmit Web addresses to handheld devices and cell phones. For example, CoolTown would make it possible for a user to point a handheld at a bar code on a CD and connect to a Web site that has information related to the CD.

HP is opening the software at the system's core, called CoolBase, to get input from open-source developers.

Both companies said they're opening the projects to open source to increase development collaboration and to help promote industry-wide adoption of

the technologies.

"One thing that we really want is for CoolBase to become a standard," said Bruce Perens, senior open-source and Linux operating system strategist at HP. "Having it open source really helps that."

Dan Kusnetzky, an analyst at IDC in Framingham, Mass., said the moves to open source could be difficult for both projects. The problem, he said, is that Sun is entering a market that has already established distributed computing applications from vendors such as Silicon Graphics Inc., Turbolinux Inc. and Red Hat Inc. That means that "Sun is going to have to do more than just put it out there to get people to use it," by differentiating it from its competitors, Kusnetzky said. "Otherwise . . . people will say, 'That's interesting' and go on doing what they were doing."

The prospects for the HP project are even less clear because it offers eventual revenue benefits to HP without any clear development benefits to the open-source community, Kusnetzky said.

"Any open-source project that just benefits the sponsor of the open-source project often doesn't do as well," he said. ▀

Matt Berger of the IDG News Service contributed to this story.

Dell to Put Own Ethernet Cards on Market

Will bundle them with servers

BY JAMES COPE

Dell Computer Corp. is adding switches to its lineup, seeking to bundle them with its server products to create out-of-the-box networks for small and midsize businesses.

The company is scheduled to launch its PowerConnect line of LAN Ethernet network switches next month.

Dell already sells its own network servers, caching servers and load balancers, and it resells network equipment from a variety of vendors. So it made sense for Dell to develop a line of network switches, said Kim Crawford, Dell's vice president and general manager of network products. Dell will continue to offer competitors' switches, as well as more sophisticated network equipment from companies like San Jose-based Cisco Systems Inc.

and Nortel Networks Corp. in Brampton, Ontario.

Dell is banking on bundling switches with servers, said Brooks Gray, a senior analyst at Technology Business Research Inc. in Hampton, N.H. Approximately 20% of the current orders for Dell servers include switches, according to Gray.

Crawford said Dell's PowerConnect line is aimed at companies or offices with 10 to 1,000 desktops. But Gray said Dell's best shot will be grab-

bing network equipment market share among businesses with 10 to 100 employees. "I think that's where 80%-plus of their switch sales will come from," Gray said.

Crawford wouldn't say whether Dell's network equipment strategy involves moving up the technological food chain and potentially competing directly with companies like Cisco. Nor would she say whether the Layer 2 PowerConnect devices eventually will be software upgradable to Layer 3, which would enable them to direct network traffic based on Internet protocols.

Dell's immediate goal is clear, said Gray: "They're going after the Layer 2 market, period — at least for the first six to 12 months."

Crawford said Dell would "price its switches considerably less than tier 1 and tier 2 [network switch makers]."

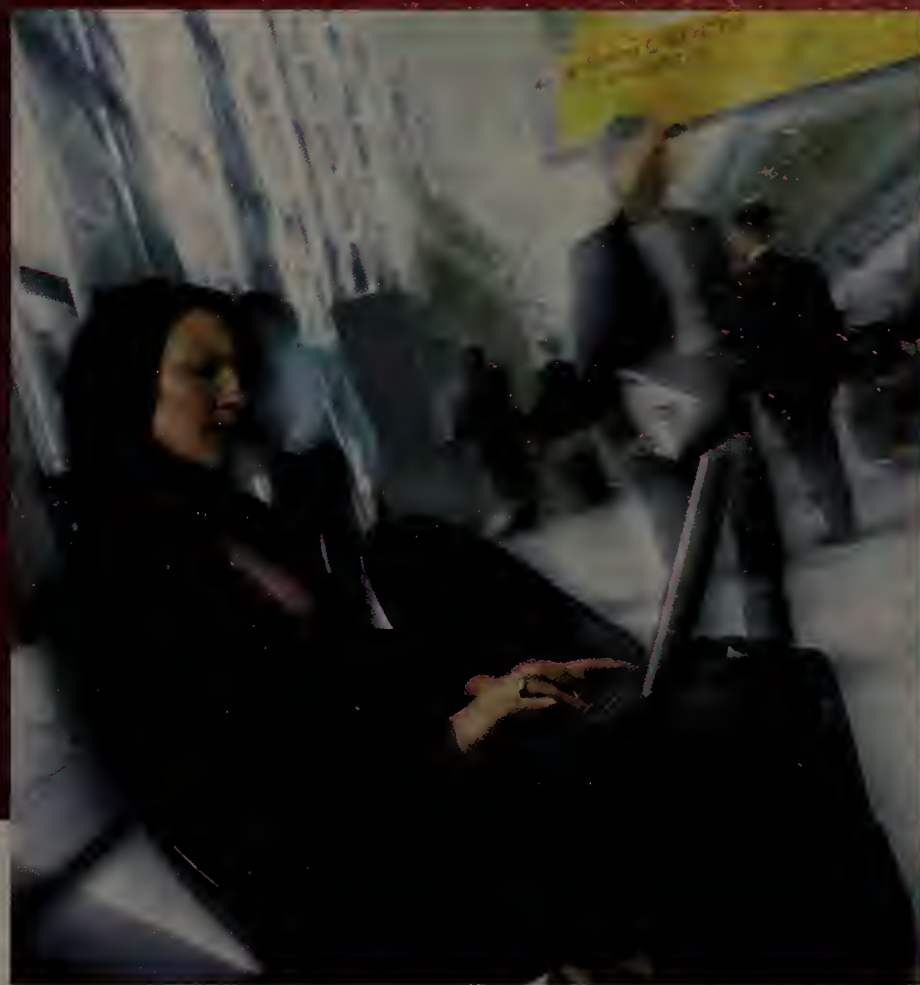
Gray said Dell could undercut competitors' prices by as much as 10%. ▀

A Switch at Dell

Highlights of Dell's network equipment strategy:

- New line of Dell-branded Layer 2 switches
- 10/100M bits/sec. and Gigabit Ethernet
- Bundle switches with servers
- Aimed at small and mid-size business market

YOU CAN ONLY BE IN
THREE PLACES AT ONCE.



PRESENTING WIRELESS MOBILITY FROM COMPAQ.

Our wireless solutions keep you in the loop. Even when you're outside of it. The new Compaq Evo™ Notebook N400c is one of the thinnest, lightest portables around. With a mobile Intel® Pentium® III processor and innovative MultiPort*, the N400c gives you modular wireless capability to access your network, send e-mail or check stocks from anywhere.† All at unbelievable speed. Plus, get big access from the small iPAQ Pocket PC and you'll still have room for the Compaq microportable projector that fits in the corner of your briefcase.



INNOVATIVE PRODUCTS,
INTEGRATED INTO SOLUTIONS &
DELIVERED GLOBALLY

to find out more go to compaq.com/mobile
or call 1-800-888-5846

Compaq PCs use genuine Microsoft® Windows®
www.microsoft.com/piracy/howtotell

*Wireless LAN capability currently available; wireless WAN/PAN (Bluetooth®) projected availability beginning 3rd quarter 2001. †Subject to wireless network coverage. © 2001 Compaq Computer Corporation. All rights reserved. Compaq and the Compaq logo are registered trademarks of Compaq Computer Corporation. Evo is a trademark of Compaq Information Technologies Group, L.P. Inspiration Technology is a trademark of Compaq Information Technologies Group, L.P. in the U.S. and other countries. Intel, the Intel Inside logo, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

COMPAQ
Inspiration Technology

PATRICIA KEEFE

Take a Bold Step

NOW WOULDN'T SEEM to be the best time to get big ideas about projects based on bleeding-edge technology. After all, the economy is in a tailspin, and everywhere you turn, you can hear the sound of corporate wallets snapping shut.

The *Wall Street Journal* recently reported that in three different surveys, IT professionals said they are under pressure to decrease spending, cut costs and produce quick payoffs from short-term investments. Remember those heady days back when no one tried to cost-justify Internet or Y2k investments? That was then. Now, it's all about ROI.

So pitching lengthy, big-ticket projects built around advanced technology might appear risky, if not foolhardy. But the safe approach isn't always the smart one. In recent weeks, we've seen evidence of bellwether corporations betting big money on the belief that deploying new technologies can offer both a reasonably quick ROI and a significant competitive advantage.

Sure, in some cases, the risks can be great and the ROI could be zero. But if you are willing to gamble, have a vision, can target a definite business problem and have the skills to execute, pioneering with advanced technologies can pay off



PATRICIA KEEFE is *Computerworld's* editorial director. You can contact her at patricia_keeefe@computerworld.com.

in a very big, bottom-line way, especially if your competition is nervously shelving its strategic IT projects.

Take United Parcel Service, which has launched a \$100 million-plus project to deploy the world's largest wireless LAN using relatively new Bluetooth technology. UPS is predicting a 16-month ROI [News, July 23] on the project. Then there's First Data [News, July 9]. The economy may be hurting, but First Data is investing another \$40 million this year in a massive upgrade of its IT infrastructure in a bid to posi-

tion itself for an electronic-payment future. And oil companies are traditionally unwilling to cut back on IT in hard times. They often turn to advanced computing technology to help get more oil out of existing wells and find new ones.

Sometimes, throwing caution to the wind is the most judicious business decision that IT leaders can make. It's easy enough to lie low right now, but in the long run, bold but well-conceived action by IT managers will provide real payoffs. ▀

PIMM FOX

IT Budgets May Lose Most in Newest Java War

DIG INTO YOUR WALLET! Microsoft's latest salvo in its ongoing war with Sun Microsystems over Java means you'll be supporting two platforms for a long time to come.

Windows XP, Microsoft's new operating system set for launch in October, won't include Java. Instead, desktop users who want to run some large Java applets will have to install Java on their own or buy it preloaded on their PCs. So either Sun, the PC maker or the customer will have to bear the added cost.

At the same time, Microsoft will boost its security settings on Windows XP and Office XP. That could disable Java from running.

Microsoft claims that there are two reasons for the moves: First, users don't need the code, and second, there are security issues related to Java.

This doesn't make sense.

Indeed, Microsoft added that users — presumably, those who don't need it — would be able to install Java via the Web or PC makers.

The truth is, Microsoft can't abide by Java because it threatens Windows' desktop monopoly — ever so slightly. And this action *does* confirm Microsoft's aversion to technology that works and is generally accepted (there are an estimated 2.5 million Java developers) but isn't made in Redmond.

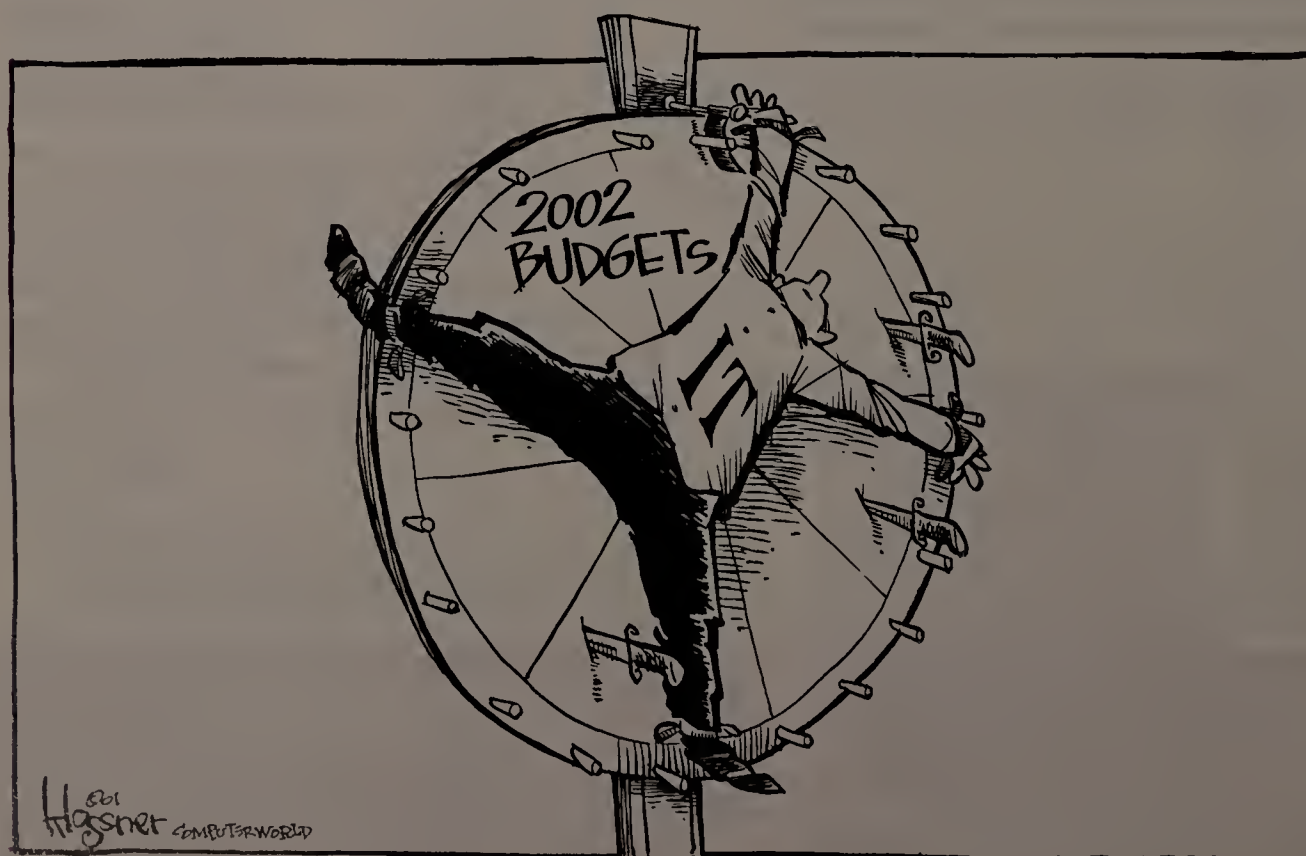
All Microsoft is doing by pulling the plug on Java is beating its chest, because the desktop isn't where Java is most relevant. If Microsoft were really serious, it would disable Java from running on NT servers.

But Microsoft can't afford to do that. Not yet.

Right now, at the server level — where Microsoft's NT boxes are still outgunned by Sun's Solaris machines — Java is widely accepted and is used to deliver everything from dynamic stock quotes to interactive e-mail. Third-party developers using Java languages such as J2EE and Enterprise JavaBeans have developed a variety of appli-



PIMM FOX is *Computerworld's* West Coast bureau chief. Contact him at pimm_fox@computerworld.com.



MOREONLINE For more *Computerworld* columnists and links to archives of previous columns, head to www.computerworld.com/oped.



cations for wireless devices as well as PCs. The write-once, run-many philosophy behind Java has been embraced by the developer community.

Until Microsoft's technology catches up with Java on the server side, the company will continue to do what it does best: embrace, extend and extinguish the competition. For companies evaluating new technologies, it means they have to spend money on both the Java-based Unix platform (or Linux) and Microsoft's yet-to-mature Windows-based .Net game plan. This dual playing field costs more to maintain.

But don't complain. Think of all that wasted money as your contribution toward maintaining some semblance of IT competition in a world dominated by Microsoft's aggressive business strategy and lackluster technology. ▀

LENNY LIEBMANN

Smart Pricing Key To Online Profits

BOGUS BUSINESS MODELS and unrealistic expectations are only part of the reason online profits have been hard to come by. Another major factor has been fundamental misconceptions about the nature of pricing on the Web.

Many retailers and purveyors of mass-market business-to-business goods have been operating under the mistaken notion that the highly competitive Web environment automatically forces prices downward. "Your competitors are only a click away!" the uninformed voices rail. "Match

their prices, or no one will buy from you!"

That seems logical, but it's false. Research demonstrates just the opposite: Price variability on the Web is actually greater than in brick-and-mortar environments. And Web shoppers, like their offline counterparts, don't shop on price alone. They look for quality, service, selection and every other attribute that's important



LENNY LIEBMANN is an independent consultant specializing in the alignment of IT resources with business goals. Contact him at llmann@home.com.

in the real world. They also don't have an unlimited amount of time to shop for the lowest price.

Here's the real kicker: Smarter pricing is often the best tool for increasing profitability. Sure, it's great to drive costs out of your supply chain and find new channels of distribution. But every penny of additional price you can get for your products or services goes directly to the bottom line. So pricing definitely warrants a closer look.

Better yet, IT can readily optimize online pricing (thereby boosting profits) by adding intelligent price-testing capabilities to its e-business systems. The Web actually provides an ideal environment for testing prices to determine optimum price points. Think about it. In the real world, you have to change displays and tags on every item whenever you want to tweak your pricing. Online, you just have to make changes in a database.

Furthermore, on the Web, you can continuously test prices and see how they affect sales volume in real time. By multiplying projected unit volume by the per-unit margin for each test point, you can quickly zero in on the price point that delivers maximum gross margin.

Some companies are a little gun-shy about online price testing because some high-profile dot-coms have gotten into trouble for offering customers different prices for the same item at the same time. But those incidents simply indicate that testing multiple prices *simultaneously* is taboo. In contrast, *serial* price tests — where prices are changed quickly in controlled incre-

ments over time — don't create objections. After all, sequential price adjustments are fundamental to the concept of a free market.

A bigger problem is the disconnect between marketers and IT. Many marketing managers still don't fully understand what IT can do for them in the online space. And many IT managers don't fully understand the economics of price, demand and margin.

But if IT and marketers can get together, the potential impact on pricing and profitability can be profound. Companies that offer great quality, service and selection will finally discover exactly how much their customers are willing to pay for those competitively distinctive attributes, so they can actually start recouping the investments they made to be able to deliver that superior quality, service and selection.

The Web is actually a great place to profitably sell goods and services. But to make money, IT and business managers must learn and take advantage of the new rules of the online game — especially when it comes to pricing. ▀

READERS' LETTERS

Listen to Customers

IAGREE WITH Patricia Keefe's editorial about Computer Associates ["Time of Reckoning," News Opinion, July 2]. If we press both current CA management and Sam Wyly's group to be more responsive to customer needs, whoever emerges as the winner will have hopefully learned what customers demand.

Carl Ott
Ellwood City, Pa.

Project Smarts

HISTORICALLY, project management has been a role designated to a programmer/analyst with some extra bandwidth and the needed technical knowledge, if not the management skills ["Fast Track Into Management," Business, July 16]. However, groups like the Project Management Institute have focused light on the cost and benefit of having trained, skilled and dedicated project

managers. A skilled project manager is a negotiator, organizer and delegator. His depth of knowledge must range from the technical to the strategic. Projects without a project manager typically run dramatically over budget, rarely meet a schedule and are frequently plagued by scope creep.

William B. Sutherland
Software project manager
Lawrence, Kan.

With Anchovies?

THE INTERVIEW with Tom DeMarco ["Preaching Slack," Business, July 2] captured the heart of the management dilemma. You must have confidence and trust in your employees. When their eyes are closed deep in thought, is it pizza on their minds, or a new answer to a problem? This great article will be used to discuss both sides of this very important issue.

John Moon Jr.
Houston
JohnMoon@ev1.net

The Face of FUD

I'LL ACCEPT Mark Hall's theory ["Farewell to FUD," News Opinion, July 16] when the media stop reviewing and hyping Microsoft alpha releases, beta releases and final release candidates. The practice of reviewing unreleased and unpriced products makes for a big "U" of Uncertainty among decision-makers.

Ben Myers
Spirit of Performance Inc.
Harvard, Mass.

Bad Manners, Bill

THE STORY "Microsoft Dropping Java Code From Windows XP" [*Computerworld.com*, July 18] makes you wonder why Microsoft doesn't just go back to when you could select all the components you wanted installed during setup. Allowing OEMs to change the desktop was a step in the right direction, but I still think it should be up to users to determine

what software is on their computers. Yes, Microsoft should be allowed to add whatever it wants to the operating system, but if I have purchased backup software, it shouldn't have to fight with the Microsoft default application for control of my tape drive.

Jerry Marshall
Help desk manager
Bank of America Corp.
Charlotte, N.C.

MICROSOFT continually ignores the concept of playing nicely with others.

Kenneth A. Lundberg
Senior programmer/analyst
Louisville, Ky.

More Letters, page 25

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. Internet: letters@computerworld.com. Include an address and phone number for immediate verification.

ALEX TORRALBAS

So Much for The 'Freedom' Of the Web

WHAT HAPPENED to the promise of the Web having endless choices and diversity?

The Web has become TV that crashes. It's *Time* magazine with hyperlinks.

The media behemoths, such as AOL Time Warner, News Corp. and Viacom, have stitched up an off-line reality whereby a music artist has his CD promoted on their radio stations, receives coverage in their print media, is interviewed by their local TV affiliates and is put on the covers of their magazines. It's

not news, it's not information, its "synergy" and shilling. And it's big bucks.

This is reducing the Web's horizons and, ironically for the big brands and big media, reducing their appeal at a time when they need more eyeballs.

XML and the rest of the new technologies won't help a bit because the Web's problems in this re-

gard are a business decision that's antithetical to the concept of the Web as a free and open space. This isn't a "dot-bomb" phenomenon. This is old power claiming the throne in the new media. It's no surprise that an old Hollywood suit is now running the show at Yahoo.

Imagine reading *Computerworld* and finding that its content is actually provided by some other periodical, as is the content of the six other IT weeklies you (try) to read. How would you form an opinion as to what's important to you, or know that you're getting a full range of news?

Consider finding travel information online. You click over to Expedia and learn that its destination information is provided by Fodors.com. You're an avid reader of *Condé Nast Traveler* magazine, so you go to Concierge.com, which features content from *Condé Nast Traveler*. With all those great travel writers, they must have an independent slant, right? Wrong. They, too, get their verbiage from Fodor's.

OK, let's search the Web for other sources of information.

Yahoo and most of the other big search/portal sites have quietly instituted policies that will render these sites meaningless as search portals. In order to be listed in Yahoo in a business category, you must pony up a nonrefundable \$199, with no guarantee that you'll be listed. That makes Yahoo an electronic "yellow pages," not the free, everyone-invited "white pages" it has, wildly successfully, been.

Well, there are a ton of search engines, right? Yes, but most of the big ones rely on the listings created by dmoz.org. From Netscape to Google to AOL Search and beyond, if the editors at dmoz.org ignore or reject you, your Internet dreams are gone. Some categories have gone for months without an editor, so anyone hoping for a listing is out of luck until the slot gets filled.

We now know that shopping is a bust for 99% of Web ventures. Big media portals are either dead or bleeding to death. What the Web needs now is someone with the radical idea that you can make money and stick with the concept that the Web demands to be free and open and not just another corporate entry on the ledger of some old fossil of a company. ▀

MICHAEL GARTENBERG

Here Are Some Personal Tips On Key PDAs

THE PDA HAS evolved from executive toy into mainstream enterprise tool. Today, most knowledge workers carry three devices: a multifunction laptop, a cell phone and a PDA for rapid access to personal and corporate data. In the past few months, manufacturers have released new devices, so business users need to focus on form, function and price, then strike a balance between them to pick the proper system.

Palm's offerings, the M500 series models, have slim shapes and support expansion via secure digital memory cards. The M500 is monochrome; the M505 adds a reflective color screen. The screen on the M505 is controversial. Some find it too dark and the colors mut-

ed. I find it excellent and a great balance between adding color and preserving battery life. My advice: Check it out before buying.

If you need more expansion options, your choices are the Handspring Visor Edge and the Sony Clié. The Visor Edge has a monochrome screen and a form that rivals the Palm's. Its expansion comes from Handspring's Springboard slot, which allows the addition of memory modules, MP3 players and even a phone. But while this sounds great, you need to attach an adapter to use the modules, which adds girth. These modules also aren't best of breed, so if you need an MP3 player or camera, you're better off having separate devices. The Clié offers a reflective color screen that boasts the highest resolution of any Palm OS device and adds a digital signal processor that allows the Clié to be used for multimedia playback. The result? The Clié is great for the user who wants the simplicity of the Palm OS and some multimedia features.

But if it's features you want, the king is Compaq's Windows CE-based iPaq, which was upgraded to include 64MB of memory (eight times the maximum of a Palm), a bright, reflective color display and a fast RISC processor.

The iPaq expands via "sleeves" that use the PC card standard, which means the iPaq can use off-the-shelf equipment, including Ethernet cards and modems, wireless 802.11b adapters and storage of more than 2GB. Coupled with versions of Microsoft's Internet Explorer, Word and Excel; an e-mail client; and support for MP3 and streaming video, the iPaq can do tricks no other handheld can, such as play full-length movies or store hundreds of MP3 files. It can even emulate your GameBoy.

But all this power comes at a price. It's not uncommon to find iPaq owners spending more than \$1,000 by the time they've added the sleeves, storage and other goodies to harness its power. Combined with the extra bulk added by the PC card sleeve and the other options, the iPaq is the best choice only for those with deep pockets — both literally and figuratively.

The key is balance. If all you need is a basic PDA with some expansion and great portability, go with one of the new Palms. If you like the Palm OS but want multimedia capabilities, go with the Sony. (The Handspring expansion options are too bulky to recommend.) If you want full multimedia and the ability to amaze your friends, there's one choice, the iPaq — combined with a pair of cargo pants.

From a support perspective, Windows CE-based devices will work better for enterprise users who can leverage the installed base of Microsoft technologies, while Palm has a larger overall installed base. But the key is to remember that the *P* in *PDA* stands for "personal," so play with all of them and pick the device that's right for your organization and your users. ▀



ALEX TORRALBAS is an independent IT consultant and Visual Basic developer in New York. Contact him at alex@atc-software.com.



MICHAEL GARTENBERG, former vice president and research area director at Gartner Inc., is an independent technology analyst and consultant. Contact him at michael.gartenberg@mindspring.com.

READERS' LETTERS

A Hard Look at Soft Skills

DAVID FOOTE'S column "Companies Need Security Professionals With More Varied Skills" was very interesting [News Opinion, July 9]. As a certified internal auditor and member of the Institute of Internal Auditors, I see similar issues every day. Companies want people with specific skills for specific tasks, rather than identifying the entire skill set necessary to effectively minimize related risks. I have argued for years that skills such as "a positive attitude, diplomacy, patience, attention to detail, tenacious abstract problem-solving ability and a strong will" have broad-based applications at every corporate level.

Kevin D. Weast

Manager, internal audit
Dollar Thrifty Automotive Group Inc.
Tulsa, Okla.

IHAVE TO APPLAUD David Foote's comments on techies needing soft skills. For the last five years, as I have tried to develop my technical experience as a systems administrator, the only thing I could really sell was my people skills, which I believe separated me from the rest of the pack. If more techies, or "geeks" as I like to be referred to as, take note of your article, it may be harder for me to get a job, but businesses as a whole will do a lot better.

Joe Louthan

Invision Advertising
Dallas
joelouthan@hotmail.com

Looking Beyond the IDS

YOUR ARTICLE on intrusion-detection systems (IDS) and false positives was largely correct, but you didn't take your conclusions far enough ["False Alarm?" In Depth: Security, July 9]. If IDSs have trouble differentiating real attacks from false positives, then they are valuable only if correlated with

other sensors on a network. Monitoring an IDS alone just doesn't make sense, and this is why companies that offer outsourced monitoring of ISS, Dragon and other IDS products don't provide nearly the level of security as those that monitor the entire network.

Bruce Schneier

Founder, chief technology officer
Counterpane Internet Security Inc.
Cupertino, Calif.

Code-Breaking With XML

IBELIEVE THAT Deborah Radcliff grossly underestimated the potential danger ["The Threat of XML," In Depth: Security, July 9]. It is theoretically possible that the well-defined content and structure of XML messages may allow cryptographers to break codes faster and easier. This should lead us to consider taking a few steps, including developing additional secure pathways independent of the Internet, adopting a newer IPSec specification and coding XML tags independently of the message traffic.

Stephen Richard Levine

Franzel Mortgage Consultants
Westlake Village, Calif.

It is theoretically possible that the well-defined content and structure of XML messages may allow cryptographers to break codes faster and easier.

STEPHEN RICHARD LEVINE,
FRANZEL MORTGAGE
CONSULTANTS

RADCLIFF MAKES an interesting case regarding the data markup standard, but she doesn't go far enough. The broader threat is Unicode. Anything, tagged or untagged, can be encoded in this insidious virus carrier. And because Unicode can carry virtually any payload through a firewall, new security vulnerabilities are introduced, just as with XML. And like XML, for which "firewalls and filters must trust that XML tags honestly describe the code they define," programs manipulating Unicode data are forced to trust that it is accurate. Why, by simply transposing a few characters, an inimical program could cause a transaction that should have been \$6,000 (6E3) to be \$3 million (3E6). First names can become last names. Shoe sizes can become bra sizes. Unless the developer validates data, there's no control over what code executes.

I was also delighted to finally see an acknowledgment that concatenating together 16-bit elements into messages is intrinsically more dangerous than concatenating together 8-bit elements. Simple arithmetic indicates that it must be at least twice as dangerous, though those of a more advanced mathematical bent will recognize the 256 X increase in inherent complexity.

Michael K. Smith
Austin, Texas

More Security Tips

THE "DIFFICULT" password "ipa2tf" is missing three components ["Top 10 Security Mistakes," In

Depth: Security, July 9]: Alpha characters need to use upper and lower case, the password needs to be at least eight characters long, and it needs to use at least one special character such as ! @ # \$ % ^ & * () _ { } [] \ / < > .

Gary Love
San Diego

HERE'S AN 11TH security mistake: securing the laptop but not the data through strong authentication or data encryption. What's more, assuming your laptop is secure because it's out of plain

Computer support technician
Terrace & Area Health Council
Terrace, British Columbia

Coalition's Stance on Spam

CONTRARY TO the assertion in the chart "U.S. Legislators Ponder Masses of Bills; Outlook Remains Murky" [Computerworld.com, In Depth: Security, July 9], the text of Sen. Dianne Feinstein's (D-Calif.) privacy bill, S 1055, nowhere mentions opt-in and provides only the right to opt out from the resale of personal information to

third parties for marketing purposes. This provides no protection against spammers who use "scraping" software to collect addresses from the Internet or against those who purchase CD-ROMs of addresses before such a law takes effect. Also, in discussing Rep. Heather Wilson's (R-N.M.) anti-spam bill, HR 718, the authors say, "Businesses oppose the bills because they worry legislation will restrict legitimate e-mail marketing."

Actually, the Direct Marketing Association (DMA) complains that the bill would cut off unsolicited commercial e-mail (UCE) before the DMA can find an acceptable way for its members to use it. Regardless of the number of consumer complaints it receives, the DMA insists that there must be a legitimate form of opt-out UCE. The claim of potential harm to legitimate e-mail marketing from the opt-in provisions of HR 718 depends on the use of a non-standard meaning of the word *legitimate*.

Edward Cherlin
President
Coalition Against UCE
Cupertino, Calif.
cherlin@pacbell.net



**14 Web applications.
79 servers.
And only one of you.**

**Strangely, you still feel
the odds are in your favor.**





Microsoft® Application Center 2000

Web server farms have always been known for providing high application availability in a cost-efficient manner. Unfortunately, in the past they have also been known for manageability headaches. But no more: Microsoft Application Center 2000 now makes managing Web applications and groups of Web servers as simple as managing a single server.

Part of the flexible Microsoft .NET Enterprise Server family, Application Center 2000 is built to be the heart of a "scale-out" infrastructure model. "Scaling out" is a flexible approach to scalability that involves deploying Web applications across multiple servers to distribute and handle the workload.

Application Center 2000 makes scaling out easier, with unified Web application and server-farm management that simplifies tasks

MARKET FACT

"The scalability benefits offered by Application Center make it possible to migrate to a distributed Windows platform. Application Center gives us on-demand scalability and is a great solution for managing Windows 2000-based Web server farms."
—Mike Budner, Production Services Manager, Terra Group

like cluster management and application deployment. Plus, it makes it easy to achieve capacity on demand through automatic replication of applications when you add servers or make changes to existing applications. But simplicity is not all you get:

Application Center 2000 offers increased uptime through dynamic load balancing and by having no single point of failure.

In sum, Application Center 2000 removes the hassle of managing multiple servers separately, while providing the availability and cost-efficiency of a "scale-out" model. Find out how to keep the odds in your favor: visit microsoft.com/applicationcenter Software for the Agile Business

Microsoft®

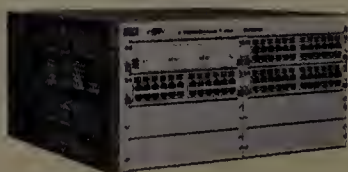
In the networking race, the faster path wins.

hp procure switches — higher performance, a lower price, and **simply faster**

Whether you're designing, building, or expanding your network, HP procure switches provide the faster path to speed and performance.

You'll be the first across the finish line with HP's fast path technology — the "switch on a chip" architecture that provides high performance at an incredibly low price!

- the highest port density in a mini-chassis per RU
- lifetime warranty*
- free software updates



hp procure 4108gl
leaves the competition in the dust

Win a Sony® PlayStation®2

Sign up for a **free network design**
from HP and
enter to win a
Sony PlayStation2!



www.hp.com/info/hpprocurve2
or call 1-800-477-6111 ext: 45761



BUSINESS

MESSY ALLIANCES

Just as it's becoming more important for business partnerships to succeed, the majority of alliances are failing, writes Jim Champy. The problem, he says, is that partners spend too much time musing about possible synergies and too little on what it takes to make alliances work. **► 30**

COMBATTING VIOLENCE AT WORK

With budgets, projects and staffing suffering massive cutbacks, the pressure is on everyone. But do you know how much pressure is too much? Violence-prevention experts offer tips on how managers can spot the potential for violence and ward it off before a tragedy occurs. **► 32**

MAXIMIZING STORAGE SPACE

The volume of corporate data generated doubles every two to three years. To cope, more and more IT managers are leaning on SANs to help maximize disk space and reduce costs. **► 36**

PERSONAL PITCHES

The dictum "know your customer" has new meaning, thanks to today's demographic segmentation tools. The ability to sort and analyze a wealth of information about customers is helping businesses personalize pitches and retain profitable clients. **► 42**



"WE HAVE PROMOTED a number of people to a management position, not because they were great technologists, but because they understood our business," says Jeff Marshall, vice president and CIO at The Men's Wearhouse.

MAKING THE MOVE TO MANAGEMENT

TECHNOLOGY SKILLS ARE IMPORTANT, but those who want to make the jump to management need to know how to nurture and motivate employees and how to recruit and retain staff. Such business savvy is the main ingredient IT leaders look for when identifying potential middle managers.

38

WORKSTYLES

Summertime Means Business For Apex Learning Employees

Interviewee: David Gedy, chief technical officer

Company: Apex Learning Inc., an application service provider and course developer for virtual schools in the K-12 market.

"We've developed an online learning platform. Each school district or state education department gets its own virtual school, and we host courses that they've developed themselves or purchased from a third party or that we've developed for AP [advanced placement] test preparation."

Main location: Bellevue, Wash.

Number of IT employees: 30

Number of employees (end users): 100

Major IT initiatives:

"We're on a school-year calendar, so we're getting ready for a big software release in the fall integrating a leading educational platform, Blackboard, into our K-12 environment. Internally, we're implementing SalesLogix and Crystal Enterprise for better reporting, we're doing a PeopleSoft implementation and we're investing in SQL Server replication. We want to better understand our data, but most of our tech spending has been on things that our customers see and touch."

Workday: "It's very strange, but we have quite a few developers who like to get in early. Maybe half of them start before 8 a.m. and do a nine- to 10-hour day. And others do a more traditional developers' shift starting at 10 a.m."

Must people carry beepers? Cell phones? "Yes, most of the IT staff carries cell phones that also page. About once a week, we have some emergency or false alarm."

The one thing everyone complains about: "Probably having to work so hard in the summer. We have an absolutely unmovable launch date with

school starting in August, so we have to put in weekends and late nights for much of the summer. We're in testing and training mode in June and July."

How will staffers be rewarded? "There aren't any formal plans, but we give some spot bonuses and some comp time for people who put in lots of overtime. Some people get to take summer vacation, but we can't have too many people

out of the office during these crunch times."

Other perks: "Our biggest investor is [Microsoft co-founder]

Paul Allen, and groups of us have been invited to join him on his private jet to go down to Portland and see the Trail Blazers play, which is a big treat. We bring in a masseur once a month for anyone

who wants a massage. We all go to Mariners games together occasionally, and we often go to openings of lowbrow films, like *The Mummy Returns*."

Dress code: "Very casual."

Decor: "We have some school decor — school lockers, a blackboard behind the receptionist in the reception area, an apple on her desk and some brick to look like a schoolhouse."

Office mascot: "We have the Apex Spirit Trophy, a gaudily decorated former softball trophy, and whenever there's an event in the company, the department who wins gets the spirit award. . . . We have elaborate pageants at Halloween, and last year [IT] re-enacted the *South Park* kids trying to take online courses."

Would employees feel comfortable e-mailing the CEO, Keith Oelrich? "Very much so. We're a close company."

What about Paul Allen?

"Some employees, including myself, communicate with him quite regularly."

— Leslie Jaye Goff
(lgoff@ix.netcom.com)



What It's Like To Work at...

Why Partnerships Fail

JIM CHAMPY

IT'S COMMON PRACTICE TODAY for companies to form alliances or joint ventures. In theory, these partnerships make sense. After all, no company has the scale, skills and reach to do everything — especially if its business depends heavily on information and communications technologies. Not since the early days of GM has a company tried to build a totally vertically integrated enterprise.

Companies recognize that they need one another to invent, produce, sell and service their products. That's the theory. The practice is another matter entirely. Most partnerships fail.

Take, for example, Concert, the joint venture between AT&T and British Telecommunications to provide large customers with global communications services. The venture made sense on paper. Neither AT&T nor BT had a globe-spanning network. Why should they spend capital to compete when they could pool their resources and customers and share in the benefits?

But Concert now loses about \$200 million per quarter and the partners have constantly bickered about how to run the venture. Worst of all, the partners can't figure out how to take the venture apart and divide its assets and customers. Perhaps they were carried away by the possibilities of the alliance, or they neglected to put breakup terms into their agreement. I think the real problem is cultural: a clash between the British and American management styles.

But just when such deals are failing, it's becoming even more important for them to work. Amazon.com, for example, needs Toysrus.com to bulk up its product offerings. And Toysrus.com shouldn't spend money to develop an electronic channel when Amazon already has one that it can use.

Other joint ventures, such as the automobile makers' Covisint, require multiple partners to work together. Their challenge will be to overcome the normal laws of competition in order to cooperate. These ventures can learn from the failures of others.

Sometimes, a partnership fails because one party tries to dominate the relationship, showing a disregard or even disdain for what the other party brings. But more often, both parties just spend too much time musing about the fantasy of possible synergies and too little time figuring out

what it really takes to make an alliance or joint venture work.

Forming a business partnership is more problematic than making an acquisition. When you buy a company, it's generally clear who's in charge. When you form an alliance, it's influence, not authority, that's at work.

My point here isn't to discourage you from creating alliances. In the world of technology, you must depend on others. But you must answer some questions about your potential partners in order to create business success rather than waste valuable management time. The following are four questions to consider:

Do our potential partners share our vision of the industry? You and your partners must have a common view and strategy of where business is going. What you build together operationally must support this shared strategy.

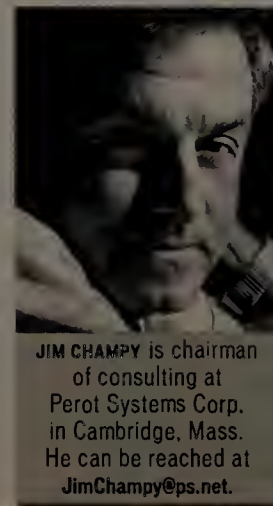
Do our potential partners share our values? When a crisis occurs — say, a breakdown in communication with a customer — you want your partners to respond just as you would. Sharing values is just as important as sharing ideas.

Which partner has the best processes? Don't assume that the largest partner is the most advanced in process design. Determine who has the best capability.

How do we harmonize processes across our organizations? Partnerships require processes that work

across organizations. For example, one partner's selling processes may need to link with another's service processes. This isn't easy to do. It requires openness and the willingness to standardize processes among the partners.

These questions can be applied to all types of businesses that want to form alliances. They can also help you deal with cross-functional or cross-divisional initiatives within your own company — when it sometimes feels as though you're negotiating a treaty between two countries. ■



JIM CHAMPY is chairman of consulting at Perot Systems Corp. in Cambridge, Mass. He can be reached at JimChampy@ps.net.

BEST IN BUSINESS INTELLIGENCE

MicroStrategy

	MicroStrategy	Business Objects	Cognos
Full-function All-HTML Interface	●		●
XML API	●		
Microsoft ODBO-compliant Server	●		
Integrated Query, Reporting & OLAP	●	◐	◐
SSL Security	●	◐	◐
Built-in Financial Functions	●		
HTML Email Delivery	●		
Rich Report Formatting	●	●	●
Self-tuning Scalable Server	●		
Java SDK	●	●	

MicroStrategy 7 is the most scalable
business intelligence platform,
built specifically for the Internet.

See for yourself.

Order your free evaluation CD today.

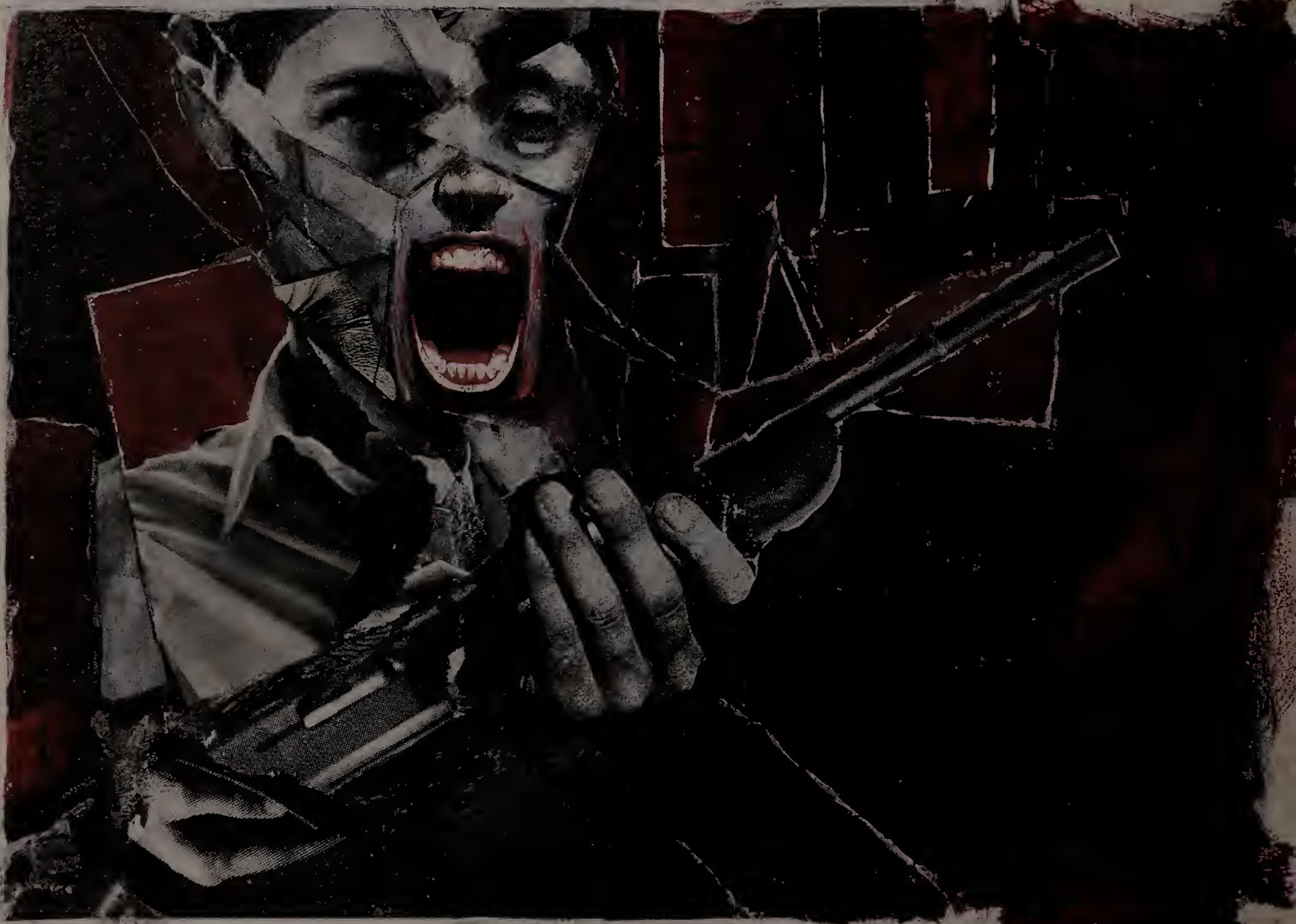
MicroStrategy®
Best In Business Intelligence™

ORDER YOUR FREE EVAL CD TODAY

www.microstrategy.com/eval/bi/cw

Get a fully functional evaluation license of MicroStrategy 7 software

Comparison of MicroStrategy 7.1 with Business Objects 5i and with Cognos PowerPlay 6.6 and Cognos Impromptu 6 out-of-the-box. All company and product names are the property of their respective owners. Information based on publicly available information as of 5-1-01.



DAVID HOLLENBACH

Rage in the

There are steps IT managers can take to identify the warning signs for blowups and help staffers channel their anger.

By Melissa Solomon

"Please join us in remembering our seven colleagues whose lives were tragically taken on December 26, 2000, and who will be missed dearly."

THE OPENING MESSAGE on Edgewater Technology Inc.'s Web site flashes for just a moment, but its effects linger long after the words fade.

Not only does it evoke memories of December's highly publicized office shootings in Wakefield, Mass., but it also reminds us that violence isn't limited to dark city alleyways or convenience store holdups. It can strike in a place as familiar as your office, initiated by people you work with every day.

Round-the-clock cell phone calls,

constant badgering from end users, a company merger, mass layoffs, tight project deadlines — it's more than some IT professionals can bear.

"In many cases, the workplace is a place of sanity for most people," explains Joseph Dadourian, a workplace psychologist and employee assistance program provider in Los Angeles. "When that changes, it can trigger something."

The stakes are high. Workplace aggression and stress affect almost 250,000 U.S. workers annually, according to the Occupational Safety and Health Administration. Stress-related disabilities cost U.S. corporations more than \$300 billion a year in legal settlements, lost production and operational expenses, and they cost workers more than \$16 million in lost wages.

A study released in January by Athabasca University and *CIO Canada* magazine, a *Computerworld* sister publication, highlights just how big a problem workplace tension is, particularly in IT. When asked if IT has increased employees' stress levels, 55% of the 3,300 IT and business managers in North America who replied said yes. Only 27% said their organizations were using technology to effectively manage change, says Peter Carr, associate director of the Centre for Innovative Management at the Athabasca, Alberta-based university.

The study suggests that people want to do their jobs well but feel that technology is preventing them from doing so, and that's creating tension, Carr says. If nothing changes, they'll just stop caring. Or worse.

Flat-Footed

When Andrew Scott started as technology director at AeroGroup International Inc. last year, the tension in the IT department was spreading throughout the entire company. The Edison, N.J.-based maker of AeroSoles shoes had already given up on one failed enterprise resource planning (ERP) initiative, and its second attempt had been put on hold when the U.K.-based ERP vendor, JBA Holdings PLC, was bought by Toronto-based Geac Computer Corp. in 1999.

The vice president of IT had just been fired, and the IT director quit. The entire IT department was taking a beating from employees throughout the company, who were divided along two lines: those who thought the old system was fine and were mad at IT for messing things up, and those who saw the benefits of the new system but thought IT didn't have the expertise to

Checklist

To prevent violence in the workplace, managers should:

■ **Be able to define workplace violence.** There are three types: stranger violence (someone walks into a grocery store and shoots the merchant), client-related violence (an angry father shoots his attorney when he loses custody of his child) and employee violence (not only committed by staff, but by contractors, cleaning staff or even workers' spouses).

■ **Understand the breadth of the problem.** It could be someone running a key down the length of a co-worker's car. In one case, an employee put a firm's calling cards on the Internet. When the FBI investigated, it learned the perpetrator had plans to kill the CEO.

■ **Be familiar with the company's violence-prevention policy.** Most people don't even know where to find it.

■ **Be prepared to take immediate action when violence occurs.**

■ **Know the concepts of prevention:** civility; defusing difficult or dangerous people. Many colleges offer courses in this area.

■ **Have layman's understanding of civil liability.** Know how to avoid getting sued for negligence in case violence occurs, and understand the basic standard of care. The Occupational Safety and Health Administration states that employers must provide "a safe and healthful work environment for all workers."

SOURCE: LARRY J. CHAVEZ, CRITICAL INCIDENT ASSOCIATES, RANCHO MURIETA, CALIF.

Workplace

Rage in the Workplace

carry out the implementation.

Scott knew he had to do something about the stress his employees were feeling, so he had one-on-one meetings with every member of the IT department to discuss their concerns. He also spent a lot of time working to rebuild the IT team, and he got the company's executive leadership to show public support for the department.

"We're pretty much stable now," says Scott. "We've jelled great."

The ERP implementation has been delayed until September, giving Scott the room to get his department back on track.

"The biggest thing we get stressed out on is deadlines," he says. If you allocate enough time for projects, it can make a huge difference.

The Human Touch

Both Dadourian and Larry J. Chavez, a hostage negotiator at the Sacramento Police Department and founder of Critical Incident Associates, a workplace violence-prevention consultancy in Rancho Murieta, Calif., have been getting lots of calls lately from companies preparing for mass layoffs. In just the first quarter of this year, 305,227 people fell victim to mass layoffs nationwide, according to the U.S. Department of Labor.

But, says Chavez, it's "how it's handled that determines whether it's going to be a problem."

Two weeks after the America Online Inc./Time Warner Inc. merger went through in January, the company announced that it would lay off 2,400 employees. The AOL side took a hit of more than 700 staff cuts. But, says Angelo Ioffreda, director of internal communications at the Dulles, Va.-based Internet company, "I think it went very well overall."

"You don't want to get too good at this, but we always strive for [a standard that] if we have to let people go, we treat them with the utmost respect," he says. The goal, he adds, is for people to think, "At least they treated me decently."

AOL Time Warner offered its displaced workers a variety of outplacement services. For the "survivors" who remained, executives tried to clearly explain what was going on, when the staff cuts would occur and how people would be affected, says Ioffreda.

Such precautions are critical, says Dadourian. Frustration on the job, combined with an argument at home, a traffic jam on the way to work or an unpleasant encounter with an incompetent boss, could push someone over the edge. But there are warning signs that, if dealt with properly, can prevent someone from erupting, he adds.

"No one just snaps — that's a misnomer," says Dadourian, who runs a training program for psychologists at BHC Alhambra Hospital in Rosemead, Calif., where he regularly interviews perpetrators of violence. "When an act of violence happens, everyone becomes a psychologist, but it could have been prevented. . . . There can be all these signs of previolent behavior." (See "Threat Assessment" at right.)

The problem is that even if they spot signs, most people don't know what to do. Do you confront the person? Do you report the behavior to your manager? What if you're overreacting? Will you get your colleague in trouble for no good reason?

That's where violence-prevention programs come in. Dadourian says all companies should have a clear code of conduct for employees as well as a plan to monitor workers' performances, and if there's a problem, a list of available resources. That plan needs to be easily accessible and understood by all employees, he says.

It's often human resources workers, security personnel and facilities managers who receive violence-prevention training, "but it doesn't trickle down to the people who see what's really going on," says Chavez. It's the front-line managers who need the training most.

"That's the secret to this," says Chavez. "And what's scary is that these people are not getting trained."

A recent survey by the Alexandria, Va.-based Society for Human Resources Management found that 35% of human resources professionals train managers and supervisors to identify violent behavior. "That means that 65% of them don't," says Chavez, who adds that many of the professionals he speaks with often weigh whether they can afford to train every front-line manager.

"Can we afford to send them?" he asks. "My response to that is, 'Can we afford not to? What happens if we don't?'"

When William Gebhardt started at Jacobs Engineering Group Inc. 13 years ago, one of the first things he did was hire Dadourian as a consultant.

"Dr. Dadourian has sort of been in our hip pockets since I've been here," says Gebhardt, vice president of human resources at the Pasadena, Calif.-based technical services provider.

An Ounce of Prevention

"You just never know when you need something like that. You don't just go out and start looking [when a problem arises]. You need to establish relationships in advance."

Jacobs has a "readily available" violence-prevention plan that's listed on the front page of the company's phone directory, says Gebhardt. It defines threatening messages and tells employees what to do in case of a threatening situation, such as a medical emergency, a fire or a bomb scare. It even contains a checklist for people to fill out as a situation evolves.

Jacobs also tries to help its staff cope with stress through regular presentations on topics such as stress prevention and management, diversity, safety and affirmative action, according to Gebhardt. The company once teamed up with its health insurance provider to offer stress-management services for a group working on a high-pressure project.

But such preventative steps can't guarantee that violence won't strike. Chavez is trying to introduce a bill in the Massachusetts and Nevada legislatures that would give employers a major tool to protect themselves and their workers. Already law in Arizona and California, the legislation would let employers get restraining orders in the company's name against workers. And he's pushing a bill that would require companies to post violence-prevention information in public areas.

People need to be aware that when they see threat indicators, someone must ask if there's a problem and offer help, says Chavez. "When they're hitting rock bottom, people are going to take assistance," he says.

Sometimes, just offering a clear, rational voice to help someone who's feeling overloaded can be enough, adds Dadourian. "Most people when they're stressed, they close down, they narrow their thinking. What I like to do is expand it. There's always a way out." ▀


MOREONLINE

Learn how to create a safe workplace in tough times and reduce the potential for violence when firing workers.
www.computerworld.com/rage

Threat Assessment

When conducting violence-prevention training, Larry J. Chavez asks participants if they've ever spotted signs of violence in the workplace, and almost everyone has a scary story, "things that are beyond just having a nervous feeling in your stomach," says Chavez, the founder of Critical Incident Associates. He describes the following as warning signs that someone may resort to violence:

- **Committing an act that is clearly in violation of the company's workplace violence rules.**
- **Identifying people as targets.**
- **A past history of minor threats or violence.**
- **Direct threats or actual injury toward a targeted person.**
- **Multiple life/work stresses,** ranging from a company merger to the loss of a pet.
- **Lack of support from family or friends or an unwillingness to turn to them.** Women talk; men retreat. "It just gets stored," says Chavez. "I think it's the reason why men are the predominant killer in the workplace."
- **Indicators of suicide — express or implied, such as giving away personal, priceless possessions.** Among workplace killers, 28% commit suicide at the scene, and 7.6% are killed by police in suicide missions, according to Chavez. "It's almost typical male logic: Everything's gone now, I have nothing to live for," he says. "Most men define themselves by their jobs."
- **Domestic violence.** Thirteen percent of fatal cases of workplace violence are related to domestic violence. A man comes into an office building to murder his estranged wife and also kills her co-workers. He may even target the people at work who, for example, introduced her to an employee assistance program.
- **Marked changes in behavior.**
- **Any escalation of any of the aforementioned activities.**



Opportunity no longer knocks.
These days, it darts past the door
before you can even react.

With the explosion of e-commerce, the old rules of competition have been thrown out the window. To remain even one step ahead today you need immediate access to the best data available. And software that quickly converts it into knowledge you can act on. Which is precisely why 98 of the FORTUNE 100 count on SAS, the world leader in data mining and e-Intelligence. SAS enables you to capture, integrate, explore and analyze information from across your entire enterprise. To recognize and seize opportunities at the speed of the Web. And to make competitive decisions with greater confidence than ever before. To learn more on how we can propel your organization, call 1-800-727-0025 or stop by www.sas.com.

The Power to Know™



CHEAP SPACE

With corporate data mushrooming even as the economy tightens, IT managers are leveraging their use of storage-area networks to maximize their disk space and reduce costs. By Jackie Cohen

BECAUSE THE AMOUNT of corporate data that's being generated is doubling every two to three years, IT managers are becoming more strategic about managing their storage costs — particularly in a soft economy. To combat these challenges, savvy IT leaders are adding multiple terabytes of capacity to their enterprises while also implementing storage-area networks (SAN) to maximize their organizations' use of disk space, simplify administration and reduce costs for a variety of applications.

A SAN is a high-speed subnetwork of shared storage devices. A storage device is a machine that contains nothing but a disk or disks for storing data. A SAN's architecture makes all storage devices available to all servers on a LAN or WAN.

Because stored data doesn't reside directly on a single server as with a RAID system or tape backup, server power is utilized for business applications and network capacity is released to the end user.

"We're still learning all of the benefits of the technology," says Roger Cox, an analyst at Gartner Inc. in Stamford, Conn. "We still have a ways to go before these type of architectures become the dominant architectures, but they will in the near future." Last year, about 15% of the storage market was SAN-based, and it's expected to grow

at an annual rate of 86% through 2005.

Talk to IT executives whose companies use the technology, and it's easy to see why SANs are on the upswing. When Jim Ditmore was CIO at Omaha-based Ameritrade Holding Corp., the company "moved to a SAN environment for greater reliability," he says. Ditmore joined Chicago-based Bank One Corp. as its chief technology officer earlier this month.

"We could use a more robust configuration than we could get with dedicated disk," says Ditmore. "Then, if we had a problem with a particular server, [we could] fix it without compromising access to storage. [Ameritrade is] saving anywhere from 20% to 30% [in storage costs] by using the SAN, while also getting improved operational performance."

Ameritrade's Web site handles an average of 150,000 trades and a couple million stock quotes each day — creating such a big data trail that the company has been forced to scale up its storage by about 15% each quarter. To comply with Securities and Exchange Commission requirements, every trade requires that a confirmation statement be generated. These and other financial statements, along with customer data gleaned from quote requests, are all housed in the SAN.

With a current total of 4TB, increasing the utilization of storage space at Ameritrade from 50% to 70% is "like getting 800GB for free," says Ditmore. So while the company has paid Hopkinton, Mass.-based EMC Corp. \$2.5 million for the SAN since it was first implemented 18 months ago, the system has already paid for itself.

SANs also reduce storage management costs, says Eric Voisard, senior vice president of enterprise data man-

“

We still have a ways to go before these type of architectures become the dominant architectures, but they will in the near future.

ROGER COX, ANALYST,
GARTNER

agement at Bank One in Chicago. "Without a SAN, you have to recable every time you want to change your storage hardware setup. But not with a SAN, where you plug in [the client server network] once and everyone can access all of the tape drives. I'm saving \$50,000 to \$100,000 by not having to hire outsourcers to mess with the configurations — I can do it myself," he says.

In addition, says Voisard, SANs "improve our speed to market with new products, because we can scale up more quickly and not have to worry about system outages when we're recabling the disk drives." Those benefits are extended to Bank One's customer relationship management and back-office financial systems, which also connect to the SAN, says Voisard.

The bank's SAN consists of 12TB of tape storage, with six switches from San Jose-based Brocade Communications Systems Inc. connected via Fibre Channel to three IBM boxes with 4TB each. The configuration feeds into an IBM customer data warehouse which, thanks to the SAN, is freed up to do faster parallel processing, thereby helping to tame maintenance costs.

Bank One's hybrid of older and newer storage systems is consistent with what other companies have in place. "For years, firms have built their storage infrastructures piecemeal," says Galen Schreck, an analyst at Cambridge, Mass.-based Forrester Research Inc. "But with volumes of data and costs going through the roof, companies need a new approach." ▀

Cohen is a freelance writer in San Francisco. Contact her at jackieee@pacbell.net.

What's in Store

SANs are about to hit critical mass as more companies turn to the technology to tame their overwhelming data troves. Here's a quick look at Global 3,500 companies' storage plans for the next two years:

	NOW	IN TWO YEARS
Direct-attached storage	92%	84%
Storage-area networking	44%	80%

BASED ON A MARCH SURVEY OF 3,500 GLOBAL COMPANIES, MULTIPLE RESPONSES ALLOWED



PRESENTS

NETWORLDSM + INTEROP

Conference: September 9-14, 2001
Exhibition: September 11-13, 2001
Georgia World Congress Center
Atlanta, Georgia

AN INTEROP[®] EVENT

15 Years

OF WORLD-CLASS NETWORKING
INDUSTRY EVENTS!

LEARN

EVALUATE

CHOOSE

DISCOVER

Where the
network

Get the keys to the latest solutions for
driving business success.

- **THE EXHIBITION:** Evaluate network infrastructure and management solutions from 600+ leading vendors.
- **EDUCATION:** Choose from the most current content available in more than 60 conferences, tutorials and workshops.
- **INTEROPNET:** Discover emerging technologies showcased at the InteropNet Labs (iLabs), and cutting-edge solutions working in real time on the InteropNet Event Network (eNet).
- **COMMUNITY:** Connect with other enterprise professionals and service providers and exchange ideas with industry experts.

Register online at
www.interop.com

or call 888-886-4057;
international 781-433-1516.



The Official
Internet Provider
of Key3Media

Use Priority Code CTMG when registering

OFFICIAL CORPORATE
SPONSORS OF
KEY3MEDIA GROUP



Mercedes-Benz

Official Automotive Sponsor



NYSE

New York Stock Exchange

Copyright © 2001 Key3Media Events, Inc. 303 Vintage Park Drive
Foster City, CA 94404-1135. All Rights Reserved. NetWorld+Interop
2001 Atlanta is a Key3Media event. Interop is a trademark of
Key3Media Events, Inc. NetWorld is a service mark of Novell, Inc.
and may be registered in certain jurisdictions.

Are You Manager Material?



JEFF MARSHALL, a vice president and CIO at The Men's Wearhouse, says his company has promoted technology people "not because they were great technologists, but because they understood our business."

Knowing the technology isn't enough – today's IT managers need business, people and political skills. Here's how to know if you have what it takes.
By Minda Zetlin

THERE WAS A TIME when all it took to climb the career ladder in IT was a good understanding of technology. The more you knew, the higher you could climb. Today, understanding the technology is no less crucial. But if you want to start moving up the rungs of the management ladder, you need a lot more than that.

"Years ago, if you knew more about the current software than anybody else, you could get a great job," notes Jane Howze, managing director of The Alexander Group, a Houston-based search firm that places IT executives. "You still can. But the best jobs are going to people with management skills who can

manage and motivate a staff, recruit and keep turnover low."

And so, top managers report, today's successful IT middle manager is a "people person," someone who's as good at giving performance reviews or handling conflicts among team members as he is at writing code. He must also have a thorough understanding of the business side of the company's operations.

"That's a difficult blend to find — someone with a good technical upbringing who's also a strong human resource manager," says Doug LaBoda, vice president of information systems and CIO of the claims service and personal lines at Travelers Property Casualty Corp. in Hartford, Conn. "But my experience has shown me those are the people who are most effective, whose projects come in on time and who can depend on their workforce when faced with a difficult task."

Assuming you've already got top-notch technical skills, what are some of the human resources skills you'll need to be a successful manager? The following are some that today's top IT executives consider essential:

Understand the Business

1 "We have promoted a number of people to a management position, not because they were great technologists, but because they understood our business," says Jeff Marshall, vice president and CIO at The Men's Wearhouse Inc., a specialty apparel chain in Houston. Within the organization, technology is a service business, serving users who in turn serve customers, says Marshall, who works in the company's Fremont, Calif., executive offices.

"There are many people in technology who are enamored with the latest-generation language or application or gadget. Sometimes, it clouds their vision of what is required to serve the customer," he says. Although The Men's Wearhouse needs and values technological expertise, what it needs at a management level is a business leader, Marshall explains.

Be a Good Communicator

2 "Communication is clearly one of our biggest challenges," says David Johns, senior vice president and CIO at Owens Corning in Toledo, Ohio. "Information technology people can get very wrapped up in technical jargon and speaking in technical terms. Communicating clearly and concisely is important — we need to be able to simply state what we're doing and how we're going to solve a problem."

Communication skills are so important that teaching experience can be a clue that a job candidate will make a good manager, according to Francis Juliano, chief technology officer at DoveBid Inc., a Foster City, Calif.-based firm that specializes in industrial auctions.

"Good managers seem to be good educators," he says. "When you're looking at someone's résumé and wondering if they'll make a good manager, you look for depth and breadth of experience, not only on the development side but on the project management side."

Ideally, a candidate should already have

some management experience, he adds. "A manager needs to be able to both hire staff and terminate staff," Juliano says. "It takes quite a bit of strong character."

Learn How to Motivate Others

3 Motivating others can be tricky, especially for technology people, who can often get through large portions of their workdays with minimal human interaction.

"Typically, engineers and developers only have to interface with the computer," Juliano says. "A good manager is someone who's also working with people on the team and has shown an ability to develop those skills."

Such skills are especially crucial for managers in technology fields, thanks to the tight labor market.

"Technology people are in great demand around the country, and if they're dissatisfied, they can leave pretty easily," LaBoda says. He adds that the past few months' layoffs and company closings haven't changed that, "so you have to be very good at providing whatever makes them want to stay with you."

Average technology turnover runs in the 20% range, he adds. "That's an important statistic to try and beat. You want to do much better than that, and you'll only be able to do so much with compensation," says LaBoda. "Sooner or later, other qualities become important. What is it about working for you that makes them want to stay in your company and keeps them engaged and energetic?"

That's why, when evaluating management candidates, Juliano says he listens carefully for what he calls "the 'me, myself and I' problem. Someone will be telling you about a project they worked on, and in their story, the project only managed to succeed by that person's sheer efforts."

It's appropriate for an interviewee to describe his skills and experiences, of course. "But when you're communicating your great skills, you should also talk about the other people who were part of the process," Juliano says. "There is no *I* in *team*, and a good manager knows what a team is and how to create one."

Be Confident in Your Ability to Lead

4 "Insecure people don't do very well as leaders or managers," says Johns. "Secure people can approach leadership in a much healthier way. They're confident in their abilities, and they're comfortable with their roles. They know they don't have every single answer, that they can be wrong and that they can ask questions. They figure out when it's good to be a participant in a team and when it's good to be the leader. They're comfortable with that."

But what about an insecure person who harbors management aspirations?

Johns says confidence comes from a combination of experience and being honest with oneself. You can gain experience by managing small projects and tackling lower-level management tasks, he says.

On a more personal level, "an insecure person needs to step back and ask, 'What are my problems?'" Johns says. "That's a very individual case." ▀

MOREONLINE

For tips on how to be a better manager, visit our Web site.
www.computerworld.com/manageskills

Zetlin is a freelance writer in Woodstock, N.Y.

How Do You Measure Up?

Not everyone is cut out to be a manager. So before you set out to land that middle-management position, career experts advise, give serious thought to the question of why you want to be a manager in the first place.

Chances are, it's not the only way to advance your career and increase your pay. Many companies promote and compensate their expert technologists about the same way they reward managers.

To accommodate such people and make the best use of their skills, The Men's Wearhouse has developed a track for IT employees that parallels the climb up the management ladder, except they don't actually manage other workers.

"There are some people who love technology, who want to be knee-deep in it," says Jeff Marshall, the company's CIO. "So we've developed a different career path. It allows someone to go from an analyst to a senior analyst to a consultant to a senior consultant. They make \$100,000 a year."

Following a track like this may be a better alternative than trying to squeeze yourself into a management role that isn't a natural fit. Marshall recalls one technology person who took on a new department, overseeing new technology, and ran into trouble.

"I needed stronger leadership with a newer department," Marshall recalls. "This person certainly had the technology skills, but he wasn't quite the leader or motivator I would have liked him to be."

Complaints from this manager's team kept filtering back to Marshall. "They were constantly coming to a decision point and not going beyond it," he says. "He didn't have the vision to give them an overall direction."

Giving your team members an overall goal is essential to motivating them, Marshall adds. "You need to be able to say, 'Ultimately, we're going left. You may need to take a right here in order to get there, but that's where we want to wind up,'" he says.

After seven months and several conversations about how the team needed more direction, it became clear that this manager couldn't handle his role. "We moved him into a position that was less a leadership role," Marshall says. "And that's worked out quite well."

He adds that although he wasn't sorry to have given this would-be manager a chance, it was also important to face the fact that the situation wasn't working. "Ultimately, your team is depending on you to make that call," Marshall says. "Otherwise, you'll have turnover."

— Minda Zetlin

There are some people who love technology, who want to be knee-deep in it.

JEFF MARSHALL, CIO,
THE MEN'S WEARHOUSE

Fine-Tuning FOR THE HOLIDAYS

The economic slowdown has led many retailers to put the brakes on some IT initiatives, but that hasn't stopped several big-name merchants from investing in improved navigability and other e-commerce enhancements. By Carol Sliwa

Not long ago, July signaled a call to arms for retailers trying to ready their e-commerce sites for the holiday shopping season.

But now that the economy is sagging, retailers are more cautiously preparing their Web sites for the holidays. On the front end, there's more tweaking and fine-tuning going on than major site overhauls. Meanwhile, there's a continuation of work on the back end to better integrate online stores with legacy systems and brick-and-mortar and catalog operations, say industry experts and practitioners.

"There's a lot of pressure on e-business units to show profitability at a time when the parent company is suffering from slow revenue and weak profits," says Andrew Bartels, an analyst at Giga Information Group Inc. in Cambridge, Mass. "It's a very conservative time in terms of investment in this area." The retail industry has lowered its expectations for the coming holiday season, leading many merchants to "hunker down and focus on what they need to get through the next six months," he says.

"Right now, a lot of retailers are just trying to improve what they can [with their Web activities] in the short term, without dumping a lot of money into it," says Heather Dougherty, an analyst at Jupiter Media Metrix Inc. in New York.

Back to Basics

Many retailers are simply trying to improve the basics on their sites.

For example, Pier 1 Imports Inc. is striving to make its Microsoft Corp. Active Server Pages "faster, simpler and more intuitive" for users to navigate with a new launch of its site this fall, says Andy Laudato, vice president of information services at the Fort Worth, Texas-based home furnishings specialty retailer.

"We've learned, and everyone has learned about usability," Laudato says. "We're going to get away from a lot of the pure marketing to a more functional [focus]."

By Sept. 1, J.C. Penney Co. plans to deliver more personalized page views based on its customers' multichannel purchasing habits, says Robert Green, a systems development manager at the company. The custom-built system will allow portions of a Web page to display products that the retailer thinks a particular customer might like to check out.

Another priority for the Plano, Texas-based department store this upcoming holiday season is to install a new deployment engine to enable servers to automatically post new content and promotions. Although J.C. Penney's content-management system from Pleasanton, Calif.-based Documentum Inc. contains a deployment module, it couldn't handle the retailer's product and promotions volumes, Green says. So IT staffers had to come in at 4 a.m. to shut down portions of the company's servers, update them and bring them back online.

The new content-management system is expected to generate substantial manpower and time savings, particularly as staffers post promotions to the Web site for hot holiday items. "In the past, we have not been able to get [them] out to the site quick enough," Green says. "Now, we'll be able to do that."

For traditional retailers, an ongoing challenge is the expensive and time-consuming effort to better integrate Web sites with their brick-and-mortar, catalog and back-office operations.

Saks Direct, the online and catalog arm of Birmingham, Ala.-based Saks Inc., has a major initiative under way to integrate its point-of-sale systems with its Internet operation so it can conduct more of its fulfillment activities from its 62 stores, rather than solely from its distribution center.

"We have a billion dollars of inventory sitting in our stores, and I've got to go out and buy \$100 million [in additional inventory] for my Saks Direct," says Robert Dykman, chief technology officer at Saks Direct, commenting on the project driver.

Several analysts predict that increasing numbers of retailers will look to offer their customers the option of buying online and picking up purchases at local stores. Circuit City Stores Inc. has been a trailblazer in that regard, but few sites have achieved the level of integration that the Richmond, Va.-based electronics chain has between its in-store point-of-sale systems and Web site to enable real-time inventory checks. Gartner Inc. in Stamford, Conn., noted last year that fewer than 2% of online sites could conduct real-time inventory checks. ▀

Online Elves

E-commerce sales for previous holiday seasons:

2000 **\$10.8B**
1999 **\$7.0B**

Note: The holiday season comprises November and December. The dollar figures are for U.S.-based e-commerce sites.

SOURCE: JUPITER MEDIA METRIX INC., NEW YORK



WE CAN HACK INTO YOUR INFRASTRUCTURE.

SO CAN MILLIONS OF OTHERS.



You have security. But is it strong enough?

LET IBM ETHICAL HACKERS TEST THE STRENGTH OF YOUR DEFENSES BEFORE THE UNETHICAL KIND TRY. Security threats are a shocking fact of e-business life. 85% of computer security experts surveyed by CSI and the FBI reported that their infrastructure (networks, servers, software, storage systems) had been breached at least once in the last 12 months. The trend is climbing.[†]

We can help you defeat intruders at their own game before they get near your data. Engage our ethical hackers. These IBM cyber-savvy specialists will try to penetrate your infrastructure. Use the detailed report our ethical hackers provide to improve your defenses.

In fact, we can help you strengthen every aspect of your security. For example, our Security Health Check

service can give your infrastructure a total checkup. If there is a real attack, our Tivoli® SecureWay™ Risk Manager can help you correlate data from multiple checkpoints to gauge the severity and react in real time. As your organization grows, our Managed Security Services can help you keep your defenses up-to-date 24x7x365.

Help protect your data and your reputation. To learn more and to get your free copy of *Inside Internet Security: What Hackers Don't Want You To Know*, a 270-page antihacker manifesto, call or visit us online today.

Millions may be trying to get into your infrastructure. Make sure you can keep them out.



DEFEAT HACKERS. FREE BOOK SHOWS HOW.

1 800 IBM 7080, ask for Defense

ibm.com/e-business/soready/p2

IBM®

Demographic Segmentation

DEFINITION

Demographic segmentation is an approach used by companies to separate or identify customers by socioeconomic groups, such as location, age, sex, occupation and education. The results are often used to aim marketing and sales campaigns at niche customer groups.

BY MARC L. SONGINI

TO GAIN AN EDGE in nabbing profitable clients, savvy companies often use segmentation techniques to slice and dice customer data in an effort to match the best sales prospects to specific products and services.

All customers leave data "footprints" about themselves in each transaction they make, which companies can in turn analyze to help determine future buying preferences. These bits of customer relationship management (CRM) information — such as the date of purchase, the buyer's location and the types of products purchased — can be used by a retailer to create a sales and marketing campaign for, say, women between the ages of 35 and 55 in the Chicago area whose household income is in the top 10 percentile and who show a predisposition for buying upscale shoes.

To mine such data electronically, companies use online analytical processing (OLAP) or data-mining applications from vendors such as SAS Institute Inc. in Cary, N.C., and Information Builders Inc. in New York.

But there are big challenges in gathering and making use of this data. The data itself must be solid and reliable, the categorization and definitions in

the data must be consistent, and the folks who launch these queries must be flexible in the types of methodologies they use, says John Thompson, vice president of marketing at WhiteCross Systems Inc., a maker of analytical software in San Francisco.

Roots of Segmentation

The concept of using automation to conduct segment analysis goes back to the turn of the past century, when the government employed punch cards to tabulate the U.S. census, says Aaron Zornes, an analyst at Meta Group Inc. in Stamford Conn.

When the first commercial computers were introduced in the 1950s, customer segmentation was one of the first applications for which they were used. Pioneers in this area include catalog companies such as Minnetonka, Minn.-based Fingerhut Cos. and others.

As recently as the mid-1990s, companies would typically ship customer data to a third party, such as San Antonio-based Harte-Hanks Inc., for analysis and segmentation. The third party would send the results back to the originating company for use in direct-mail campaigns. But the advent of relatively affordable OLAP and data warehousing tools has made it possible for retailers

and other companies to run these analyses themselves.

Now, enterprise managers prefer to keep that data in-house, merge it with accounting and sales figures and run queries from their own desktops, says Zornes. Among the companies providing the applications are Unica Corp. in Lincoln, Mass.; Hyperion Solutions Corp. in Sunnyvale, Calif.; and Chordiant Software Inc. in Cupertino, Calif. This type of analytic software generally starts at \$250,000 for an enterprise license.

"The trend has been quicker and easier access to the infor-

mation, creating a dashboard for a senior executive to look at on the fly," says Kaenan Hertz, director of CRM digital intelligence at the Student Loan Marketing Association, or Sallie Mae, in Reston, Va.

Making Data Accessible

Historically, data at Sallie Mae was stored in a single mainframe, which made it difficult for employees to access the information and run their own segmentation queries.

To remedy that, Sallie Mae recently formed a special team to make the CRM data accessible to end users through a client/server network. Extracting the data and making sure it was valid required significant customization work, says Hertz.

The key challenges that Sallie Mae has faced since then include limiting access to specific data for certain employees and ensuring that the segmentation programs run fast enough across millions of cross-referenced records, according to Hertz. The company factors in not only the age

and sex of the borrower when running a query, but also what school he went to and for how many years.

Sallie Mae recently installed software from E.piphany Inc. in San Mateo, Calif., to help segment customer data and run more efficient e-mail marketing campaigns.

The Web has provided companies with yet another sales channel from which to extract data in addition to phone, fax, catalog and direct mail.

To assist its sales efforts, online retailer eBags Inc. gives customers the option of filling out profile forms when they visit the eBags.com Web site, says Mike Frazzini, vice president of IT at the Greenwood Village, Colo.-based firm.

Using software from Broadbase Software Inc. (which recently merged with Redwood City, Calif.-based Kana Software Inc.), eBags cross-references this data, learning how customers came to its Web site and what they're interested in.

The \$500,000 system, which went live last fall, has already started to pay for itself via improved response rates to e-mail campaigns. Frazzini says he would like to see the system run analyses on customers while they're shopping at the site and pitch product offers on the fly.

While the Web has helped end users access segmentation applications more easily, as a sales channel it hasn't been a magic bullet for segmentation.

"I view the Internet as a sort of new touch point, but it hasn't been as strong a touch point as everyone would have thought," says Malcolm Fowler, vice president of business development at Vancouver-based Ernex Marketing Technologies Inc., a subsidiary of the Royal Bank of Canada. ▀

The trend has been quicker and easier access to the information, creating a dashboard for a senior executive to look at on the fly.



KAENAN HERTZ,
DIRECTOR OF CRM,
STUDENT LOAN MARKETING
ASSOCIATION

JOE AUER/DRIVING THE DEAL

Don't Let Vendors Limit Accountability

IF WE WERE TO SIT DOWN and discuss high-technology negotiations in the broadest sense, we'd probably reach general agreement. For one thing, we would probably acknowledge that negotiations between buyer and seller involve an inherent conflict of some basic objectives — between the high-tech vendor who wants to maximize profits and minimize risk, and the customer whose goal is to minimize cost and risk. We'd also probably agree that there's nothing wrong with both sides trying to limit their risks in a deal.

Rational customers and suppliers realize that negotiations are about the *fair* allocation of dollars and risk. But some customers still leave too much money on the table and assume too much risk. They allow the vendor to maximize its profits and to push the majority of the risk across the negotiating table right into their laps.

One way vendors limit their risks is by getting limits on the remedies they must provide for nonperformance. During recent negotiations for a large, multiyear service contract, the astute representative of a potential vendor adeptly tried

to give the impression that he was willing to provide substantive service levels and meaningful nonperformance remedies.

When the customer took a closer look at what was being offered, it became apparent that, in the final analysis, the clever vendor wasn't providing much of anything. In fact, the customer was still being asked to assume the vast majority of the risk of the vendor's nonperformance.

This was the situation: As the provider of specific data communications services, the vendor agreed to commit to

several service levels. The levels were industry-standard in concept, but recognizing that it would be in a highly dependent relationship, the customer negotiated for more favorable service levels. The vendor agreed.

During the remedy phase of the discussions, the vendor agreed to what appeared to be an escalating scale of remedies. This *sounded* good at the outset.

The deal went like this: In the first month a service level was missed, the vendor would issue a credit for a percentage of the monthly service fee. In

the second and third months, the service fee credit percentage increased each month for the same infraction if it continued to occur. Finally, in the fourth month, if the problem remained, the customer had the unilateral right to cancel the contract for the vendor's nonperformance.

By agreeing to this, it appeared that the vendor had complete confidence in its ability to perform. But the deal wasn't yet a *done* deal.

At this point, the vendor insisted on limiting the total remedies, undermining its supposed complete confidence. A financial analysis by the customer revealed that if the vendor failed to meet the contractual service levels in any two consecutive months, its proposed

remedy limit would quickly be reached and the vendor would be off the hook for any additional increase in the service fee credit, no matter how bad its performance.

Basically, the customer was being asked to underwrite the

vendor's risk of nonperformance by assuming all of the risk above the remedy limit after only a very modest level of accountability on the vendor's part.

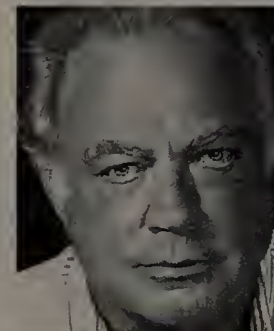
In terms of remedies, once the vendor reached the limit, it was obligated to do nothing. The customer might get lip service such as "We're work-

ing on it" or something similar, but more than likely, that would be all.

From past experience, many of us know that when things get a bit tough in terms of vendor nonperformance, the vendor's incentive to fix the problem becomes limited, right along with the limited remedies.

The lesson here: Beware of the remedy limit "gotcha." If you decide to allow rem-

edy limits, make sure that they're high enough to provide significant incentives for the vendors to perform the contracted-for service levels. Have them step up to some meaningful accountability before they escape. ▀



JOE AUER is president of International Computer Negotiations Inc. (www.dobetterdeals.com), a Winter Park, Fla., consultancy that educates users on high-tech procurement. ICN sponsors CAUCUS: The Association of High Tech Acquisition Professionals. Contact him at joea@dobetterdeals.com.

BRIEFS

Study: 50% of U.S. Banks Gone by 2007

A recent study by Stamford, Conn.-based Gartner Inc. claims that new technology, mergers and competition will leave the financial services marketplace with about half as many players, from the 9,821 banks in operation today to 5,000 in 2007. But although other analysts agree that mergers and acquisitions will continue, not everyone is convinced that the outcome will be so drastic. "I don't think it will be anywhere near 50%," said Dave Potterton, research director at Meridian Research Inc. in Newton, Mass.

BMG Exec Named New Napster CEO

Redwood City, Calif.-based Napster Inc. last week named Konrad Hilbers, a former senior executive at Bertelsmann AG, as its new CEO. Hilbers has been at the German media company since 1992, serving for the past six months as chief administrative officer of BMG Entertainment, Bertelsmann's New York-based music division. He will replace Napster's interim CEO, Hank Barry, who will remain on Napster's board of directors. Bertelsmann was one of the major music labels to file a copyright lawsuit against Napster, but in the midst of the suit, BMG and Napster formed an alliance to develop a paid-subscription membership service.

G8 Seeks to End Global Digital Divide

At the recent Group of Eight (G8) economic summit in Genoa, Italy, world leaders endorsed a plan to help bridge the growing "digital divide" within and between nations. Although the idea is to push groups within the respective countries to develop their own national IT strategies, the international community will have a panel of IT experts available to provide advice.

Kia Taps E-Biz Vendor

Kia Motors Europe GmbH, a division of Kia Motors Corp. in Seoul, South Korea, has upgraded its dealer infor-

mation system with an application that lets auto dealers in Germany access auto and parts inventory information through a secure intranet. The system, which uses Atlanta-based Seagull Software Systems Inc.'s J Walk software, enables more than 500 dealers to gain real-time Web access to information about the availability of cars, warranty administration, maintenance and sales.

Severance Pay Drops

Cash severance payments to employees who have been terminated this year are down 20% from severance awards in 1997, according to a survey by Manchester Inc., the career management consulting unit of Jacksonville, Fla.-based Modis Professional Services Inc. However,

companies have enhanced other separation benefits, such as outplacement assistance, health insurance and access to employee assistance programs, the survey found.

Firms Search for Layoff Alternatives

Half of the IT executives interviewed for a recent study said their companies have explored or will explore alternatives to layoffs. The study by Arlington, Mass.-based Cutter Consortium asked IT managers at 50 firms with 25 or more IT employees about their cost-cutting plans. It found that temporary pay reductions, shorter workweeks and job-sharing arrangements are the most popular strategies.

RELIABLY FAST AND SCALABLE

SO RELIABLE, IT'S THE LEADING DATABASE IN HEALTHCARE

More hospitals around the world are running their "life-or-death" applications on Caché than on any other database system.

With proven reliability like this, you should consider Caché for your critical applications.

With its lightning speed and massive scalability, the performance of Caché makes it a perfect match for any enterprise, *in any industry*, with a requirement for fast transaction-processing applications capable of scaling to tens of thousands of users.

Caché uniquely combines robust object and relational technologies, coupled to a multi-dimensional data engine. Plus, it includes a rapid Web application development environment.

Caché is backed by 24x7 support from InterSystems – a leader in high performance databases for 23 years, with 4,000,000 users* worldwide in healthcare, financial services and other industries.

InterSystems
 **CACHÉ**
Make Applications Faster

Download Caché for free or request it on CD at www.InterSystems.com

* InterSystems' database technology is used by Ameritrade, Hitachi, Johns Hopkins, Kennedy Space Center, Paine Webber, Pepsi Cola, Prudential Insurance Co., Shell, U.S. Army, World Bank and other successful enterprises.
© 2001 InterSystems Corporation. All rights reserved. InterSystems Caché is a registered trademark of InterSystems Corporation. 26-3

TECHNOLOGY

SECURITY JOURNAL

With no network map to go by, Mathias Thurman finds that he can still develop a road map of his organization's IT security infrastructure by examining router access control lists and firewall rule bases. **46**

FUTURE WATCH

Hayden Planetarium Director Neil de Grasse Tyson says the proposed National Virtual Observatory would combine data from the world's telescopes and space probes into one virtual repository, making the information accessible to anyone with a computer and Internet access. **47**

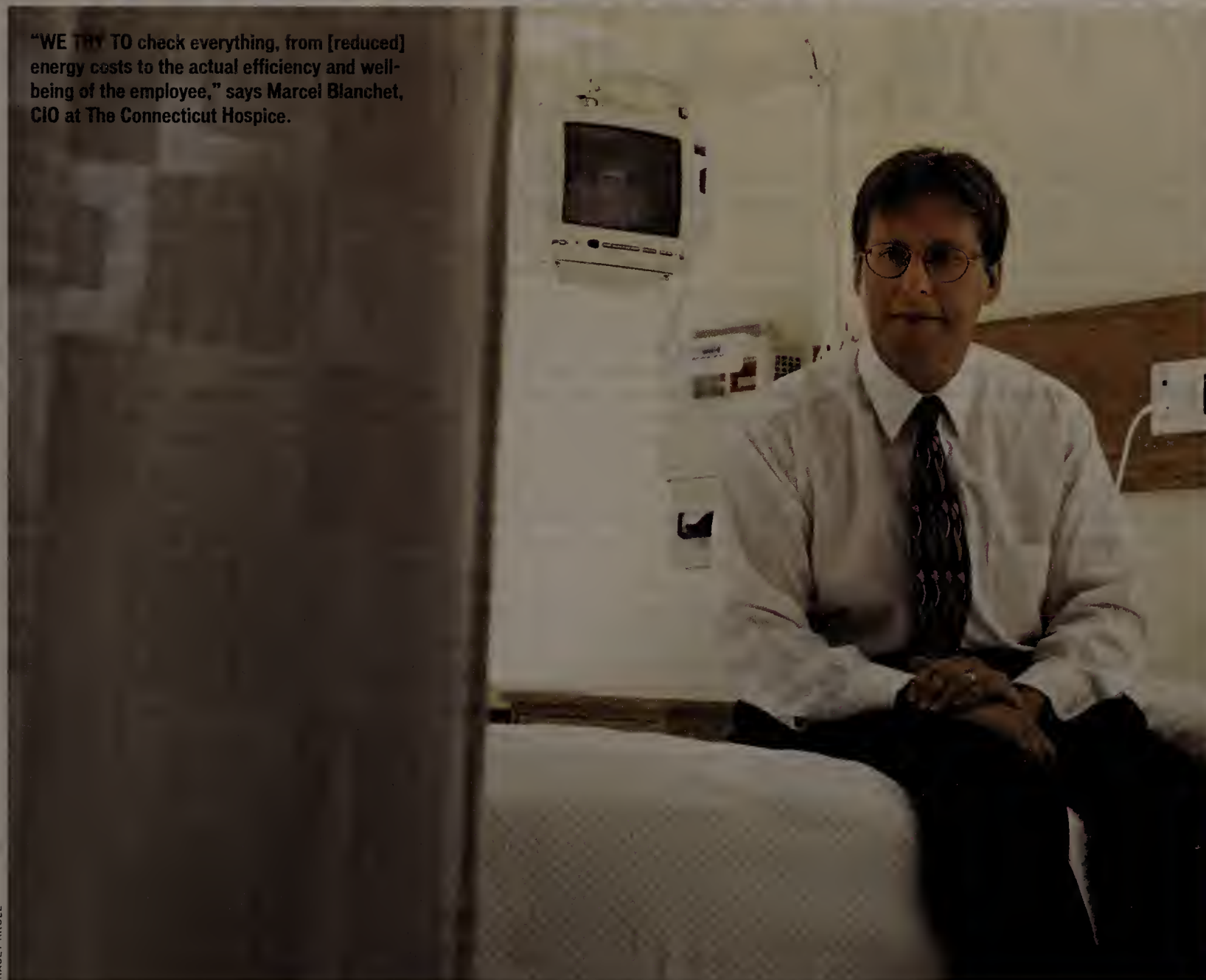
HANDS ON

The newest version of Windows updates 2000, replaces Me and says goodbye to the 9x code base. *Computerworld* tallies up the improvements and limitations to see whether an upgrade to XP makes sense. **50**

EMERGING COMPANIES

ProSight's software weighs the risks and benefits of IT projects to assess their viability. The start-up also offers a standard way to prioritize and report on the relative progress of IT initiatives — in terms nontechnical managers will understand. **51**

"WE TRY TO check everything, from [reduced] energy costs to the actual efficiency and well-being of the employee," says Marcel Blanchet, CIO at The Connecticut Hospice.



TRACEY KROLL

IT HELPS HOSPICE PUT PATIENT CARE FIRST

AN IT INFRASTRUCTURE REDESIGN from the ground up at The Connecticut Hospice is delivering benefits to patients while boosting staff productivity and reducing costs. A new wireless LAN lets nurses use handheld computers to update patient information at bedside. A desktop videoconferencing system connects four remote offices, cutting meeting travel time and expenses. And the new infrastructure delivers other services, including Internet access and videoconferencing for patients.

48

Undocumented Network Hides Vulnerabilities

With no diagrams on hand, Mathias taps router and firewall data to build a view of the IT infrastructure

BY MATHIAS THURMAN

TO PROPERLY SECURE the IT infrastructure of my company, I need to determine how the systems are connected in relation to one another. Unfortunately, we have no network diagrams depicting the current state of the architecture. My challenge this week is to figure out how to gain that knowledge — fast.

A good network diagram would depict the network's topology in reference to network segments, which I could then use to determine trust relationships among the Windows NT servers. A logical diagram usually depicts which systems are connected to which firewall, routers, switches and so on. So how can I gather this infrastructure information without the use of network diagrams?

I could just interview all the system administrators and network folks to get an inventory of all the systems and routers. The administrators could then send me an IP address, the gateway and the network mask information for each system.

The gateway information is useful because it indicates the route that packets leaving a system must take before going out onto the network. If the default gateway is a firewall, I can use that information as part of my infrastructure map.

The problem with asking administrators for information is that I can't be sure they have a handle on all of the servers under their control. There's always room for error. Another approach might be to run a scan on all the registered network blocks, but that would give me only a list of machines, with no idea of the rules, restrictions and trust relationships among those machines.

In the end, I decided to get control of the infrastructure by obtaining copies of all router access control lists (ACL) and firewall rule bases. Firewalls and routers contain information that I can use to determine server configurations and positioning within the network.

For example, a router will tell me the route that packets must take to reach a server or group of servers. I can determine which destinations are forced to route to a firewall by looking at the router ACL.

A firewall can also be useful in determining the trust relationships or lack thereof among servers. For example, if the firewall is configured to allow Web traffic to the entire network and the network includes Web servers, e-mail servers and Domain Name System servers, I can then determine that there is a trust relationship among those servers.

Once I get an inventory of all of the firewall rule sets and router ACLs, I can start forming a picture of the infrastructure. Then I

can start to make decisions on any redesign work, the placement of intrusion-detection systems and any other security-related changes.

SecurID Servers Get the Nod

On another note, my boss authorized the purchase of RSA ACE/Server and SecurID servers from RSA Security Inc. in Bedford, Mass. Initially, we plan to use SecurID tokens to authenticate our remote virtual private network users. We're also going to use Remote Authentication Dial-In User Service (RADIUS) instead of the Lightweight Directory Access Protocol (LDAP) for authentication.

LDAP is slowly becoming the industry standard for housing user information relating to authentication systems.

Although I'd like to have seen us use LDAP, the decision to use RADIUS was based on the current use of RADIUS in other parts of our infrastructure and the fact that we have in-house expertise available for administration. In the end, the expense and excessive amount of resources needed to install, configure and maintain an LDAP infrastructure was the deciding factor.

We've chosen Cambridge Mass.-based Funk Software Inc.'s Steel-Belted Radius for our implementation. This product allows for authentication information to be passed through to an RSA ACE/Server for SecurID token authentication. This means that the RADIUS server can contain all of the users and that we can specify an additional level of authentication via the SecurID token for select individuals or groups.

I also just "appropriated" a new server. I was walking by an unoccupied cubicle earlier this week and noticed a few Dell machines sitting on the floor. The person who once occupied that cube had left the company, and the systems were up for grabs — so I grabbed one. It's a 400-MHz Pentium with 128MB of RAM and a 4GB hard disk drive on which I plan to install the latest version of Red Hat Linux and Nessus, which is a free Internet port-scanning tool.

Nessus scans all the open ports on a server and determines what service is running on each. It then attempts different hacks against the open ports to determine if there are any vulnerabilities. It's not as point-and-click-friendly as some commercial tools, but if you have a handle on Unix and want a great complement to your existing tools, Nessus is a good choice.

What's nice about such tools is that many programmers and developers contribute to their success at no charge. Many of these folks are probably being billed out at \$150 to \$200 per hour at their day jobs, yet the public can take advantage of this highly skilled labor and its contribution to a great product at no charge.

Nessus has another advantage over commercial tools. Every day, new security vulnerabilities are discovered. In my experience, usually within 24 hours

THISWEEK'S LINKS

www.nessus.org/: I highly recommend downloading this powerful, free, remote security scanning tool for Unix, Solaris, Windows and Java from the Nessus Project's Web site. Kudos to the core authors, Jordan Hrycaj and Renaud Deraison, for offering such a fine product at no charge.

www.enteract.com/~lspitz/audit.html: A firewall is only as good as the person configuring its rule base and other options. Auditing your firewall rule base should be a regularly scheduled event. This paper by Lance Spitzner tells how to audit your firewall. It's focused on Israel-based Check Point Software Technologies Ltd.'s FireWall-1, but many of the concepts apply to any firewall.

www.funk.com/: RADIUS authentication systems like those of Funk Software have come a long way during the past few years and are worth a look if you need strong out-of-the-box authentication. A demo version of Steel-Belted Radius is available for download at the vendor's Web site.

www.rsasecurity.com/products/securid/index.html: Visit this RSA Security Web page for more information about SecurID tokens and the RSA ACE/Server and how they work.

of when a vulnerability is found, someone has written an update to Nessus to scan for it. With commercial products, you have to either script it yourself or wait two weeks until the company has released a revision.

I imagine that at some point, the writers will commercialize Nessus, just as other tools have run the life cycle from freeware to commercial software. But until then, I'm taking full advantage of a great product.

So, as I sit back and wait for my firewall and router inventory, and until our SecurID token hardware and software arrive, I'll be installing Linux and Nessus — and I'll start assessing the security posture of some of our infrastructure. ▀

MORE ONLINE For more on the Security Manager's Journal, including past journals, visit www.computerworld.com/securitymanager.



Virtual Observatory

Hayden Planetarium Director Neil de Grasse Tyson proposes a virtual flight to the stars, for everyone. By Sami Lais

Astrophysicist **Neil de Grasse Tyson** is the Frederick P. Rose Director of the Hayden Planetarium at the American Museum of Natural History in New York, and a member of the National Virtual Observatory (NVO) steering committee.

The scientists who form the committee have proposed the development of an online data warehouse of ground- and space-based observatory archives, catalogs of multiwavelength surveys and computational resources (www.srl.caltech.edu/nvo/).

Every 10 years, national science councils submit their research and budget priorities to NASA and the National Science Foundation in Arlington, Va. NVO is this decade's top small initiative (<http://bob.nap.edu/books/0309070317/html/>).

We recently spoke with Tyson at the planetarium about the ongoing plans.

Why the NVO? We'll soon have more data than we could ever analyze. We need to do something, or there's going to be science that's not discovered lurking in the data.

Where would such a data repository be? How would it work? It could be distributed; it could be anywhere. Location doesn't matter, as long as you have access to the Internet.

Maybe through a series of black boxes, the data are brought together in a way that lets you observe the universe as though you were at a telescope. With the NVO, you could say, "Let me simultaneously observe in infrared and radio." That's otherwise an impossible feat, because you're either at an infrared telescope or you're at a radio telescope.

A terabyte data set being compiled today may have 10 million objects, each having hundreds of attributes. Existing brute-force analysis software doesn't scale to that size. So, what do you use? Artificial intelligence (AI) tools?

I think we have to rethink how we query our data. AI could mean intelligent worms that go through the data. Or it could be you set something loose on the data and it looks for things out of the ordinary. That's always the interesting frontier of science: when something breaks the rules.

For the NVO, are you talking about access to data and data visualization software? I'm loosely meaning those to be the same thing, because we already have access to the data but they're not in a conveniently usable relationship.

And proposed NVO metadata standards will help correct that? Yes, some of the nightmares of mismatched

data quality and breadth and depth will go away, because it'll all be the same system using the same metadata standards, the same protocols. But what those protocols will be, I couldn't say.

For researchers, how useful is a virtual reality environment like the Hayden Planetarium's Digital Dome System?

It's high-performance computing used in the service of scientific visualization. We've already thought about bringing together large data sets for display. We recognize the value of high-quality display in getting close to your data, in getting comfortable with your science.

What social changes will the NVO make for scientists? It'll be more democratic.

In the old days, the rich institutions had the biggest telescopes, and they made all the big discoveries. One reason we remember [astronomer Edwin] Hubble is not only was he a smart guy, no questions asked, but he was also sitting

on the biggest telescope in the world. With the NVO, if you have a computer and Internet access, you have access to all the data from all the big telescopes. That'll get you a lot of the way, but I still like to believe that there's a role for a dome in a university environment for the data sets that define the NVO.

Have you enlisted any IT developers for the NVO? No, not yet.

According to the NVO steering committee, initial implementation could come within five years of completing a basic design. Are you ready to start building? I would say so. Many people are completely skeptical of the whole enterprise and think it'll never happen. I shared a lot of that skepticism for a while. But even if it doesn't achieve all the goals that it imagines for itself, it doesn't mean that we still can't have some very useful tools built along the way. I think it's worth the expedition. ▀



THE NATIONAL VIRTUAL OBSERVATORY will democratize research in astronomy and astrophysics by giving every scientist access to petabytes of data about the universe that has been collected by telescopes, says Neil de Grasse Tyson, director of the Hayden Planetarium.

A state-of-the-art IT infrastructure at The Connecticut Hospice has improved both productivity and the quality of patient care.
By Robert L. Mitchell

WHEN THE CONNECTICUT HOSPICE INC. began planning in 1999 to move 175 staffers and 52 patients at its headquarters to a new building, CIO Marcel Blanchet began rethinking IT and how it could enhance health care.

In June, the Branford, Conn.-based nonprofit hospital and support organization for the terminally ill moved into a new state-of-the-art "smart hospital" that gives patients bedside access to the Internet, videoconferencing and custom programming from a new video studio. And behind the scenes, the revamped IT infrastructure is improving staff productivity while cutting operating costs.

The project shows how a series of infrastructure changes can have a significant impact on operations. But for the hospice, "the No. 1 reason [for the project] was quality of patient care," says Blanchet, who also supports 75 home-care nurses, who attend to more than 400 patients per day.

The new IT infrastructure includes handheld computers that can access and update information remotely using a modem, or via an 802.11b wireless LAN within the hospital.

In the initial pilot, in-hospital nurses have access to patient records, e-mail and word processing, but Blanchet also plans to automate clinical record

forms, which nurses still fill out by hand. "Right now, the nurses are feeling pain. Standing between them and getting things done is this pile of paper," he says.

"[The new system] certainly improves patient care," says Tara Green, director of nursing, hospital administrator and a pilot user at the hospice. "[Nurses] spend less time doing paperwork and more time being with patients."

Another large part of the hospice's mission is training, counseling and education. Staffers at headquarters and in four remote offices now have access to desktop videoconferencing, streaming video for training, and desktop-accessible voice mail.

Redesign From the Ground Up

Blanchet and his staff started from scratch after the hospice purchased a three-story office building. With a \$250,000 budget for the LAN and telephony plumbing, Blanchet installed a fiber-optic backbone with Catalyst 3500 Series 100Base-T Ethernet switches from Cisco Systems Inc. He also ran coaxial cable to each station to support video.

A 256K bit/sec. frame-relay network connects the hospital to the remote offices, and two T1 lines provide access to the Internet. Blanchet also tossed his old routers from Birmingham, Ala.-based Wellfleet Communications Inc. in favor of Cisco Catalyst 2600

Better
CARE,
Lower
COST

series units. "We did some comparisons, and Cisco was much faster and more reliable," he says.

The wireless LAN has been more problematic. The initial configuration included Intel Corp.'s Pro/Wireless 2011 hubs and PC LAN adapters for the personal digital assistants.

"We need to put [wireless hubs] in walls and closets so they're hidden," Blanchet says, "[but] we just weren't getting the coverage [we needed] from the units."

He then tested a Cisco Aironet 340 hub and was able to transfer files 1,000 feet from the hub with just 20% signal strength. Then, at the last minute, Compaq Computer Corp. offered to donate several WL 410 hubs, WL 110 PC cards and integration services. "Compaq was one of the few high-tech companies from whom we got an overwhelming response," says Blanchet, who was still testing the new units at press time.

The hospice is using Windows CE-based Mobile-Pro palmtops from Sacramento, Calif.-based NEC Computers Inc. in its pilot, as well as several iPaq Pocket PCs donated by Compaq. Blanchet plans to make the final choice and roll out 24 handheld systems for in-hospital use in August.

Home-care nurses are part of a pilot of a new clinical records system based on Atlanta-based Patient

Care Technologies Inc.'s Home Care Manager system. The nurses can download clinical information and update data remotely by dial-up connection or locally over the wireless LAN. The system, which runs on an Oracle Corp. database, will eventually feed patient information to the hospital's back-end billing and patient information system, which is a custom application running on a Sun SPARCstation.

Blanchet is considering using the system for in-hospital nurses as well, but right now, he says it's important to just get them equipped with word pro-

“

The No. 1 reason
[for the project]
was quality
of patient care.

MARCEL BLANCHET (BELOW), CIO,
THE CONNECTICUT HOSPICE

cessing capabilities and TcInet connections into the patient information system.

So far, Green is impressed with the new system. "You don't have to get out to the chart rack to do your charting," she says. "It allows you to stay at the bedside with the patient, which is what we live for here."

The hospice has also streamlined its printing and fax functions. It replaced an assortment of PC- and network-attached printers with networked, high-speed printer/copiers from Tokyo-based Konica Corp., which Blanchet says will reduce his maintenance and supply costs by 10% to 20%. And the hospital replaced many of its stand-alone fax machines with Repartee, a fax server from Seattle-based Active Voice Inc. that sends faxes and routes incoming fax images to users' Microsoft Outlook mailboxes.

Getting the Picture

The hospice allocated \$80,000 for the new IP-based videoconferencing system, which replaces an ISDN-based system for staff conferencing. (A few ISDN lines will remain as part of a system that allows family members to set up a videoconference with a patient at any Kinko's Inc. store, Blanchet says.) The new system includes monitor-mounted ViaVideo cameras from Milpitas, Calif.-based Polycom Inc. at each desktop, and TV-mounted ViewStations for conference room meetings or patient use.

One stumbling block to a full system rollout is that many of the PCs don't have the Universal Serial Bus ports the cameras require. Blanchet has budgeted \$75,000 to replace one-third of the Pentium II-class machines this year.

The conferencing system makes good economic sense, Blanchet says. "We have five satellite offices. If we do a videoconference, that means we have 20 people who do not have to travel 80 miles one way," he says. With 35 to 40 people per week involved in meetings, the system will quickly pay for itself in saved time and travel expenses, he says.

The benefits of the new IT infrastructure have added up, according to Blanchet. Staffers no longer have to leave their offices to send and receive faxes or to start large copy jobs. Peripheral maintenance costs and support headaches have been reduced as well. With more staff meetings online, remote users are more productive. And with the full rollout of the wireless LAN, nurses will spend less time updating records from handwritten notes and more time with patients.

Much of the nearly \$500,000 budget for IT improvements went toward the unavoidable expense of the move. Still, Blanchet says he has tried to quantify the benefits to management. "We try to check everything, from [reduced] energy costs to the actual efficiency and well-being of the employee," he explains.

But the hospice also puts a high value on employee morale because of the environment. "We try to give them the time and tools to do their job more efficiently so they can spend more time with the patient and have more time for themselves when they're away from the patient," Blanchet says. "We'd rather not have them working after 5 and come in stressed-out talking to patients who are dying." ■

MOREONLINE

For more on the security precautions The Connecticut Hospice took to protect its wireless LAN, visit our Web site.

www.computerworld.com/hospice



TRACY KROLL

The newest version of Windows updates 2000, replaces Me and says bye-bye to the 9x code base.

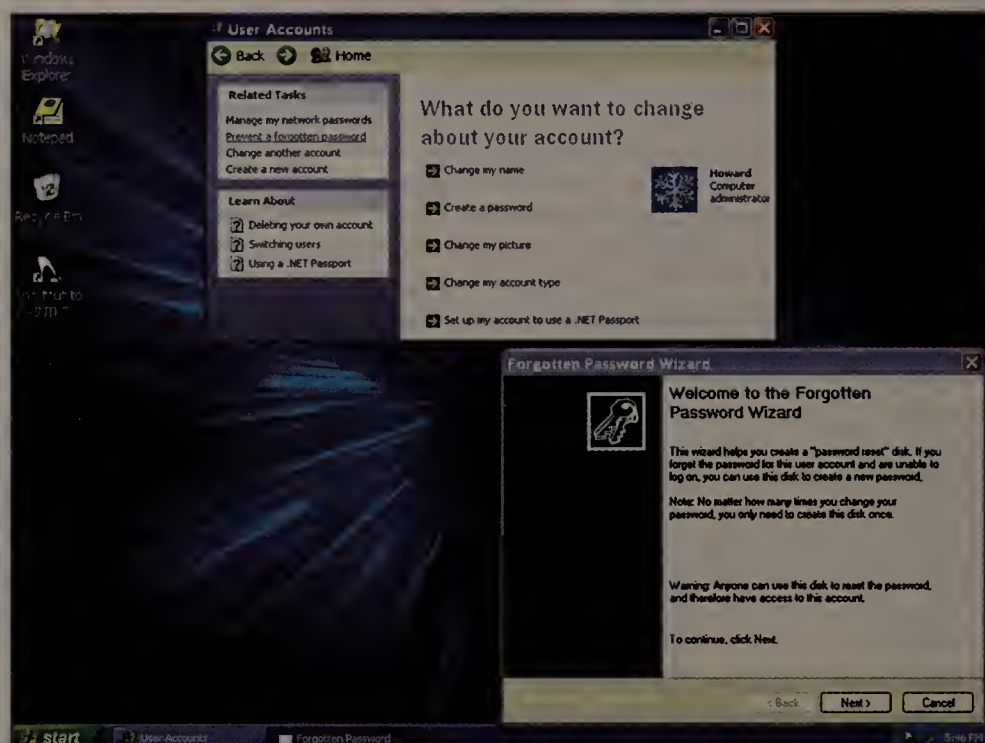
By Howard Millman

MICROSOFT may have finally built an operating system that will reduce, maybe even eradicate, daily lockups and blue-screen mystery messages. Windows XP Professional, due Oct. 25, has judiciously upgraded its predecessor, Windows 2000 Pro, in three primary areas — appearance, management, and security and networking. Windows XP may just become the reliable, predictable operating system Microsoft Corp. promised us seven years ago with Windows 95.

Secure Connections

Microsoft's "extend and embrace" philosophy now includes Remote Desktop Access (RDA), a single-session terminal server with features similar to Symantec Corp.'s PCAnywhere and CrossTec Corp.'s NetOp Remote Control. Remote users can use TCP/IP dial-up, leased lines or a LAN to access one Windows XP Pro-based host machine from a PC running Windows 95, 98, Me, NT 4 or 2000. The version bundled with XP Pro automatically logs off remote users and powers down the host at the session's end. Although its competitors run on a variety of operating systems, RDA requires at least one machine to be running XP.

XP allows users to log in to terminal server sessions using smart cards. Eliminating multiple authentications



SHIMMERING BLUES and various simplified wizards and agents are the first things you notice about Windows XP. After a while, you realize that it's still running without a reboot.

can save time for users and minimize configuration headaches.

Intruders will find their way past even the best of security policies and firewalls. File encryption can go a long way toward protecting sensitive information, and XP comes with a utility, Encrypting File System (EFS), that transparently encrypts documents in real time using a randomly generated key. First introduced in Windows 2000 for single users, XP's expanded version of EFS synchronizes with back-end servers to let multiple users access encrypted documents. But the utility encrypts only files stored in an NT file system, not the Fat32 file system.

XP's Group Policy settings accelerate rolling out new security policies, appearance and management options across multiple computers by organizational boundaries, such as depart-

ments or workgroups. This can help assure that all machines conform to the latest security standards and eliminate any unauthorized changes users make. XP will ship with more than 300 customizable policies.

Security and convenience for wireless devices will get a major boost. You'll no longer need to punch in the wireless-carrier-supplied network identification number. This should simplify life for travelers who roam across multiple networks.

Compatibility

A holdover from days past, peer-to-peer networking enables XP users to share one another's desktops, folders and printers. Now called Remote Assistance, the P2P connectivity tool lets a user invite a co-worker or guru to connect to his machine to resolve hardware or software problems. Requests for help are extended via an e-mail attachment that recipients just click on to initiate the connection. The ability to see a problem firsthand and investigate it directly, without having to visit the machine, should make life a tad easier for help desk personnel. Also, the tool can run diagnostics on the client machine from a remote location.

I tested these two remote-access features on a Hewlett-Packard Co. Vectra, multibooting XP and Windows 98, and experienced few problems. Release Candidate 1 crashed much less than Windows 98 did.

Antipiracy Activism

Microsoft has added one more convoluted step to installing XP on a PC. When you run it for the first time, you're asked to contact Microsoft by Internet or telephone to obtain an activation key. Without this, the operating system will lock up after a specified time period or number of uses. The activation key is based on the PC's specific hardware configuration so as to preclude illegal multiple installations from a single CD and complicate hardware upgrades. The activation procedure is annoying and works only for Microsoft's benefit, not users'.

Microsoft has also changed the Windows graphical user interface yet again. Users who don't like XP's softer, more colorful face can revert to the classic Windows theme — which may also postpone the need for user retraining. Thus, IT managers may want to use Group Policy to deploy a uniform appearance. I prefer XP's 3-D look, but what I really want is an operating system that doesn't freeze up every day. And this may be it. ▀

Millman is a consultant in Croton, N.Y.

MOREONLINE

For more on Windows XP's compatibility and product activation mechanisms, visit our Web site: www.computerworld.com/winxp

Do You Need It?

We've heard the proclamations from **Microsoft** before — that the new release is the best yet. This time, however, the vendor may have it right. XP's **improved networking, security and enterprise-class management features** make an upgrade from NT 4.0 worth considering. But if you're using **Windows 2000 Pro** and it runs your applications satisfactorily, there's little reason to upgrade. That's because **Win 2k Pro** and **Win XP Pro** have far more similarities than differences.

Great XP Expectations

Start-up's Tools Keep IT Projects on Track

ProSight's assessment applications help manage IT resource portfolios

BY MARC L. SONGINI

THE IT management staff at the University of Nebraska-Lincoln decided that there had to be a better way to get up-to-date information on the health of the university's systems than wading through reams of paper reports.

The IT portfolio management effort was beset by difficulties. The staff had no common list of ongoing activities or any type of master workflow process or uniform project-tracking system — in short, no way of knowing if the organization was “doing the right things right,” says university CIO Walter Weir.

To automate the process of evaluating the department's assets, the university in June of last year turned to ProSight, a software package from ProSight Inc. in Portland, Ore.

“There are limited resources in a university environment and, [simultaneously], what appears to be an insatiable need for our assistance,” says Weir. “Because there are too many things to do and too few people and funds to do all things, we must focus our efforts on the most important work.”

To figure out which projects are most important, Weir uses ProSight to measure the relative cost and risks involved against the projects' benefits and the university's long-term goals.

Weir's dilemma isn't uncommon, say analysts. Management planning takes up about 10% to 20% of an IT organization's budget, says John Cimral, ProSight's CEO. He claims that ProSight takes the headache out of IT portfolio manage-

ment — something that's usually done by sifting through spreadsheet or Microsoft Corp. PowerPoint presentations in a laborious, plodding manner.

The effort has paid off for

Weir's network. In part by using ProSight to map and explain the status of various projects, Weir was able to receive an increase in funding for this year's budget. The ProSight Web-enabled graphical presentation “makes a lot more sense to [administrators] than old-time technobabble,” he says. Nontechnical personnel can understand the prioritiza-



CEO JOHN CIMRAL says ProSight's portfolio management software is particularly useful during a merger or acquisition.

ProSight Inc.

9600 S.W. Barnes Road,
Suite 300
Portland, Ore. 97225
(877) 531-9121

Web: www.prosight.com

Niche: Software and services to help IT managers view, analyze, assess and manage a technology portfolio.

Company officers:

- John Cimral, CEO
- Mark Lawler, chief technology officer

Milestones:

- November 1988: Company founded
- June 2000: eIT-Enabler introduced (since renamed ProSight)
- January 2001: Received \$15 million in funding

Employees: 60

Burn money: \$28 million from

Orama Partners, BRM Capital, Prism Opportunity Fund and Sequoia Partners

Products/pricing:

ProSight IT portfolio management application starts at \$250,000.

Customers: 20, including PNC Financial Services Group Inc., All-Tell, University of Nebraska-Lincoln, Nordstrom Inc.

Red flags for IT:

- ProSight requires either software connectors for data conversion or manual data input.
- The software currently runs only on Windows.

Company quote: “Hundreds of things are going on in big shops, and that's a wake-up for businesses who don't really understand it's not so much juggling bowling balls but juggling BB's,” says Cimral.

tion process because “our resource scarcity is more apparent, the workload more obvious, the need to make decisions visible,” says Weir.

ProSight software comes with its own set of preconfigured rules, but IT managers can customize it, says Cimral. Customers often use the software during a merger or acquisition or after a management transition.

“You'll have a new CIO or CFO come into an organization, and the first questions are ‘How are the resources distributed?’ and ‘How much are we spending on what?’” says Cimral.

ProSight software runs only on Windows-based machines and works with relational databases such as Microsoft SQL Server and Oracle Corp.'s Oracle9i. ProSight plans to eventually open up its software to connect with more legacy systems and to conduct historical reporting and trend-spotting.

The company has a solid future as an independent firm or as a subsidiary of another software vendor, says Douglas Lynn, an analyst at Stamford, Conn.-based Meta Group Inc. The reason is that although most vendors offer only basic asset management, ProSight

lets users “really find out what the benefits and costs are [of IT projects] both in real hard dollar figures and in time and effort and be able to model that,” says Lynn.

But at least one customer remains cautious. Eric Nagel, senior vice president at All-Tell Information Services Inc., a Little Rock, Ark.-based provider of customer service systems for the telecommunications industry, says he's convinced of the firm's solid management and future prospects. Because ProSight is a start-up, however, Nagel took some precautions before buying the software. His contract ensures access to the ProSight source code in case the vendor goes bust.

“With any new product, I'm always concerned with long-term viability and product direction,” he says. ▀

the buzz

STATE OF THE MARKET

Managing the IT Portfolio

Analysts say that the IT portfolio management (PM) market is new but has much potential as companies try to find ways to make the most out of shrinking or static IT budgets. While there are a handful of vendors in the more established professional services automation (PSA) market (which focuses on automating the IT organization) that may dabble in PM, ProSight is unique in focusing its offerings exclusively on PM.

The start-up's biggest competition comes from homegrown applications and procedures developed by in-house IT staff to handle PM, says Tom Pohlmann, an analyst at Boston-based Forrester Research Inc. Sometimes these companies use third-party project management software or spreadsheets to get the job done, which can have a downside. “[Other tools] don't give executive visibility, which [companies] need,” says Pohlmann. “ProSight is good at summarizing the whole level of risk and what is the bottom line to the business.”

ProSight's competitors include the following companies:

Changepoint Corp.

Richmond Hill, Ontario
www.changepoint.com

Changepoint provides Web-based PSA software for IT departments to assist in managing projects, personnel and budgets. Changepoint claims ProSight's software is complementary to its own but is a competitor because of ProSight's partnership with Emeryville, Calif.-based PSA vendor Evolve Software Inc. However, ProSight claims it differs from Changepoint because it helps decide which projects should be prioritized, while Changepoint tracks projects that have been launched.

Niku Corp.

Redwood City, Calif.
www.niku.com

Niku claims that its software connects time, expense, billing and project management functions during IT consulting projects. The product can connect managers, consultants and clients in real time to keep everyone current on the latest activities, says the company.

— Marc L. Songini

**Your transaction rate:
rapidly rising.**

**Your anxiety rate:
steadily falling.**





Microsoft SQL Server 2000 The company continues to grow and grow. And your system's transaction rates are climbing in lockstep with it. A big deal, for sure—but nothing to get anxious about. That's because SQL Server 2000 offers scalability for even the most demanding environments. So you know that no matter how much—or how fast—your system needs to expand, you'll have the tools to handle it.

Part of the flexible Microsoft .NET Enterprise Server family, SQL Server 2000 recently achieved 20,000 SAP Standard Sales and Distribution (SD) Application Benchmark Users with a response

SQL SERVER 2000 BENCHMARK		
App. Util.	World	World Record
20,000 SD Users	2.015,330	2.015,330
Processed Items	6,046,000	6,046,000
Dialog Steps/Hour	13,600,000	13,600,000
Response Time	1.91 sec.	1.91 sec.
System Config.	32 x Pentium III Xeon 900MHz	64 x Pentium III Xeon 900MHz

time of 1.91 seconds on a 32-processor Unisys ES7000 system running as the database server

in a R/3 4.6C 3-Tier environment, surpassing a result achieved with Oracle 8.1 running on a Sun system with 64 processors.*

In addition to world-class performance, SQL Server 2000 has price/performance numbers that are 2.5 times better than the closest competitor.† Add to that native XML support in SQL Server 2000 and you've got the database that's ready to handle Web-enabled enterprise applications far into the future.

To get the full story on Microsoft SQL Server 2000 scalability, go to microsoft.com/sql/worldrecord Software for the Real World

Microsoft



Comfy Cultures

When trying on a potential workplace for size, the most important thing to consider is the environment in which you'll be working. By Leslie Jaye Goff

THE SHINY cappuccino maker and hipster associates rushing around the office talking into their mobile headsets didn't impress Ron Szybowicz.

What did leave an indelible impression on the prospective consultant during his interview at the Dallas office of a nationwide IT consulting firm was that the interviewer didn't seem particularly interested in his career goals.

In choosing the consulting agency that he would use to land his first independent gig, Szybowicz was swayed more by a recruiter at a less-swanky firm who quizzed him at length about his aspirations. "It was about substance over style," says Szybowicz, now a contract systems engineer at Directfit in Irvine, Calif., working on assignment at Verizon Communications in Dallas.

Selecting the consulting firm that will place you with clients is one of the most critical decisions you can make as an IT consultant.

To help you find a culture that's right for you, *Computerworld* asked for advice from Szybowicz; Louis Verardi, an independent consultant incorporated as Neville Communications Inc. in Tottenham, Ontario; and Mike Pollitt, an IT veteran who joined Intrinsic Technologies in Lisle, Ill., this spring.

Culture Chic

Advice on how to find a consultancy culture that's right for you

Seek recommendations from consultants with whom you've enjoyed working.

"As with any job search, networking is key," Pollitt says. His 12 years of working with and observing consultants at Chicago-based Northern Trust Corp. factored into his decision to join Intrinsic Technologies, he says.

"I had worked with about 50% of the staff here . . . so I had a general idea of how the company was run, who the partners were and who their clients were," Pollitt says. "When I thought of all the best people I knew in business, the vast majority were here."

Although Pollitt has had successful client relationships with other consultancies, they didn't pass muster when he considered them from an employee's perspective. "I didn't get the sense that they were a team of people working toward the same goal," he says.

Ask about the company's client list, business plan, profitability, bench time, and placement and billing rates.

How open the consultancy is about clients, financial information and other details can be telling. If the recruiter won't share this information, think twice about signing on with that company.

"Sometimes you can just smell the paranoia," Verardi says. "You have every right to know where they are sending your résumé and how they found out about you. You can get a very quick sense of the culture if they're secretive."

Szybowicz says he didn't follow up with the first agency at which he interviewed because "they wouldn't even tell me who their clients were. The recruiter was like, 'Hmm, I think we may have placed someone with Verizon or Southwestern Bell a couple of months ago.' He wasn't even sure. I just considered it a bad sign that they weren't upfront from the beginning."

Although such information is often hard to come by, how a recruiter fields the question of what the billing rate is will speak volumes about whether the firm views its consultants as bodies for hire or valued contributors to

its bottom line, consultants say.

Look for evidence that the consultancy is committed to forging a long-term relationship with you.

Szybowicz, who was willing to continue in his job until an opening came up at Verizon, told the Directfit recruiter that he was "low-maintenance" and didn't require constant contact.

The recruiter struck a balance that made him feel that Directfit was truly looking out for him, Szybowicz says. The recruiter didn't call to dangle alternate opportunities in front of him but nonetheless kept in touch periodically. And when an opening at Verizon came up two months later, the recruiter immediately got him in for an interview.

"They could have treated me like a number, and if they got me into Verizon, that would have been fine," Szybowicz says. "But the constant care and the personal touch are a great benefit. The kind of contact, and the frequency, is a real litmus test to gauge what kind of relationship you're going to have."

Get a sense of the strength of the consultancy's relationship with its clients.

If a recruiter promises to place you with your employer of choice, get him to substantiate how. Ask how many people the company has placed there in the past, how many it currently has working there and how long the relationship has been in place.

Szybowicz says he went to Directfit partly because he knew the company had established ties to his preferred employer, Verizon. "It was important to me that they had a fantastic relationship with Verizon," he says. "The person who placed me had intimate knowledge of the systems and software that Verizon was using, including the names of software and technologies they were using that most outside people wouldn't know. It was clear that they had a really tight, good relationship."

Find out how the agency's recruiters are paid.

Verardi notes that some agencies use independent recruiters who re-

ceive a commission for each placement they make. "That sets up an internal competition, where two people are trying to place the same consultant with different clients," he says, "and that doesn't breed a very nice environment."

Verardi says he works only for agencies whose recruiters are salaried staff members; if you're not sure, ask point-blank whether the recruiter is on commission or salaried (or both).

Consider how many layers of people you have to deal with.

Ask how the agency is organized and who your point of contact would be for problems and questions.

"Some organizations have a lot of people involved – one person talks to clients, one deals with consultants, and you end up with a lot of overhead if a problem occurs," Verardi says. "I want the person who represents me to be the one who talks directly to the client if there's an issue, whether it's about extending the contract, increasing my rate after a long time or [if] I just want to take a few days off."

Take notice of the general vibe in the offices.

As Szybowicz found, slick offices can be an indication that an agency is overcompensating for a lack of substance. "Beware of all the flash – it may be smoke and mirrors," he warns.

Verardi agrees that the physical environment can offer some clues to the culture. "Look at what kinds of computers, phones, copiers and fax machines they have," he suggests. "Is the equipment new or old? That may give you a feel for whether they're doing well or not. They could be doing too well – charging huge markups on your rates."

Also, trust your instincts about the overall ambience in the office, Verardi says. "Bad culture is very difficult to put a finger on; in a good culture, you just get a good vibe," he explains. "It's in things like how you're greeted – is it professional or unattended? Does someone walk you back for your interview? Is it in a cubicle or conference room?"

Verardi recommends that you insist on an in-office meeting with placement agencies. "If they refuse, or they want to meet you off-site, that's a bad sign," he says. ▀

Goff is a freelance writer in New York. E-mail her at lgoff@ix.netcom.com.

MOREONLINE

For more information on how managers at high-tech consultancies can help foster an attractive work culture, go to www.computerworld.com/krimski.

**MILLIONS OF
READERS**

**MILLIONS OF
SURFERS**

**ONLY
THOUSANDS
OF DOLLARS**

**TOTAL
IMPACT
TOTAL
SAVINGS**

Put your
message in
IT careers and
IT careers.com
and reach the
world's
best IT talent.

IT CAREERS

where the best get better

1-800-762-2977

ITcareers.com

Senior Programmer Analyst. Design, develop, test and implement mainframe systems applications for business clients using object-oriented methodologies. Develop graphical user interfaces. Train users. Tools: JCL, COBOL, CICS; Visual Basic; DB2; Oracle. Bachelor's degree in Comp. Science and one yr. exp. in job offered or as Programmer or Programmer/Analyst required. Prior exp. must include COBOL; JCL. "Three years undergraduate work plus one year programming experience also acceptable". 40 hrs/wk. 9am-5pm. \$57,000/year. Applicants must show proof of legal authority to work in the U.S. Send 2 copies of resume & cover letter to Illinois Dept. of Employment Security, 401 S. State St.-7 North, Chicago, IL 60605. Attn: Brenda Kelly. Reference #V-IL26972- K. Employer Paid Ad. No calls.

"CTC Corp., has immediate multiple openings for exp'd IT professionals in the following areas (various skills combination req'd.) XML, AtgDynamo, Unix, JBuilder, Informix, Rational Rose, UML, VB, SQL Server, DB-2, Able Commerce, Java-Script, WDDX, Cold Fusion 4.0 Server, Web Logic, Oracle 7.x/8i, iMerge, LADP, C/C++, XACCTusage 3.4, Clearquest/ Clearcase, SOA Suite, Win/ Loadrunner, TSO, Dreamweaver Ultradev, Index Server, MTS, etc. Pay commensurate with exp. foreign equiv of educ. and/or combination of educ/exp will be accepted. Travel/relocation reqd. Resumes & salary expectations to HR, 1845 Watkins Street, Suite #2, Bethlehem, PA 18017 or 1 Possumtown Road, Piscataway, NJ 08854."

Software Engineer in Embedded System: design/develop/implement application software and algorithms for telematics, mobile multimedia, and rear seat video products for the OEM auto market using 'C, C++ and assembly language for different micro-processor. Require: Bachelor's EE/computer science. \$50K yr, 7-4 pm M-F. Send resume: Delphi Delco Attn: S. Miller PO Box 9005 Kokomo IN 46004-9005. AD#001 Must show proof of legal authority to work in the US.

"Virtual Consulting Services, Inc., has immediate multiple openings for IT professionals with min. 2 yrs. industry exp. in VS Cobol, Parallel Crystal, Silverstream, JCL, ES9000, DYL260/280, OOAD, etc. Some positions require MS or equiv. while others require BS or equiv. CS, Engg, Math, Bus. Admin, or rel. field. Pay commensurate with exp. Foreign equiv of educ. and/or combination of educ/exp will be accepted. Travel/relocation reqd. Resumes & salary expectations to HR, 3333 South Alameda St., Ste 21G, Corpus Christi, TX 78411."

"We seek IT professionals with industry exp. (various skills combination req'd.) in WinNT Server, SCO-Unix, Oracle Database Server, Oracle 7.x, VB, CSNW, GSNW, CISCO 2600 Router, LDAP, IIS, etc. Pay matching with exp. Foreign educ. equiv &/or combination of educ/exp. accepted. Travel/relocation reqd. Res. only to Compunet Services, Inc., 3015 Clearwater Dr., Douglassville, GA 30135"

Sr. Data Warehouse Developer, Omaha, NE: Use COBOL, SOL, DB2, and data modeling tools to analyze, design and implement DW solutions. Support a variety of data mart DBMS's, including MS/OLAP. Provide support for client area business intelligence tool use. Requirements: Bachelor's degree in computer science or related field, plus five years experience. Mail resume to Physicians Mutual Insurance Company, c/o Human Resources, 2600 Dodge St., Omaha, NE 68131

eCash Technologies, Inc.

has an opening for the posi-

tion of Senior Development

Engineer in Bothell, WA.

Please send resumes to

hwebb@ecashtech.com.

"We seek exp'd IT professionals with industry exp. with the following skills (various skills combination req'd): Uniplex, MS Graph, Formula One Data Windows, WinNT/Unix/Novell Servers & protocols, Pro*C, DTMF, Oracle Express, Oracle Power Tools, SQL*Net Optimization, ODBC drivers; study/analyze heuristic algorithms, etc. Pay matching with exp. Foreign educ. equiv &/or combination of educ/exp. accepted. Travel/relocation reqd. Res. only to OST Int'l Corp., 1300 Iroquois Drive, Ste. 255, Naperville, IL 60536."

**WE
DO
A
BETTER
JOB AT**



**HELPING
YOU
GET
ONE.**

IT careers.com

SENIOR BUSINESS SYSTEMS ANALYST

Northern New Hampshire manufacturer of inkjet printer technology seeks to fill a position for a Senior Business Systems Analyst to play leadership role in areas of documentation and data control, Quality systems, Engineering Change Management, ERP and Workflow. Job Duties: Analyze, design and implement new systems and enhancements, addressing functional problems from initial investigation through design, coding and implementation; develop and maintain software solutions for complex business issues; be responsible for project planning, including scope, tasks, deliverables, milestones and documentation; coordinate, guide and document user requirements for systems to be developed or modified; be responsible for report writing, Data Mart/Data Warehousing development, and ERP application support; make use of engineering and manufacturing expertise to analyze and implement major cost reduction programs.

Requires: Bachelor's degree or equivalent with academic training in Systems Analysis and Applications Programming; four (4) years' experience in applications development, implementation, and maintenance in a manufacturing or engineering environment; SOL database skills (Oracle and Access preferred) in a UNIX/NT environment; experience with PowerHouse and Visual Basic software. Salary: \$85,000 per year. Send two (2) copies of resume/letter of application to: Job Order 2001-217, P.O. Box 989, Concord, New Hampshire 03302-0989.

SOFTWARE ENGINEER to design, develop, implement, test and integrate third party application software within the operations network management structure using programming such as Perl, PHP, and C; Maintain and scale servers and applications; Prepare project plans and perform user acceptance tests; Act as a technical liaison with vendors; Maintain documentation of projects for company records. Require: Bachelor's degree (or equivalent) in Computer Science, Electrical Engineering, or a closely related field, with one year of experience in the job offered or as a Programmer/Analyst or Computer Consultant; Bachelor's equivalency gained through a combination of academic credit and work experience will be accepted. Salary: \$68,400 per year, 8 am to 5 pm, M-F. Send resume to: Corporate HR, EarthLink, Inc., 1375 Peachtree St., Level A, Atlanta, Ga 30309 (no phone calls please)

COMPUTER

PricewaterhouseCoopers is one of ComputerWorld's Top 10 Best Places to Work in IT. We are continually seeking Information Technology/Systems Integration Principal Consultants and Consultants in the following areas:

- Application Development
- E-Business
- Data Warehousing
- PeopleSoft
- Siebel
- SAP
- Oracle
- Systems Administration/Integration
- Process Improvement
- Strategic Change
- Supply Chain Management
- Systems Auditing
- Network Integration

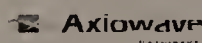
Please e-mail your resume to: careers@us.pwcglobal.com by either pasting your resume within the body of the email or attaching as a single txt or html file. We are proud to be an Affirmative Action and Equal Opportunity Employer. PricewaterhouseCoopers www.pwcglobal.com/msccareers

SOFTWARE QUALITY ASSURANCE ENGINEER to design and develop quality assurance strategy for all testing phases of the product life cycle; Develop specific test plans for new releases and revisions; Create and execute automation testing scripts and manual functional tests using Test Plan standards and development tools used in the installation, including C, C++, Java, Java Scripts, HTML, XML, and Oracle under Windows 95/98/NT, UNIX and DOS operating systems; Participate in automation testing using OA Partner and Silk, and track software bugs using Clear Quest; Test program for validity of results, accuracy, reliability, and conformance to company's standards; Perform functional, integration, system, regression, performance, volume, and stress testing on web based and wireless applications, Desktop/PDAs/Handheld PCs, and other small wireless devices; Develop processes to enhance new software installation; Work closely with developers to ensure quality of products shipped. Require: M.S. degree in Computer Science, an Engineering discipline, or a closely related field. Must have a demonstrated ability to perform the stated duties gained through academic coursework/previous work experience. Competitive salary offered. Send resume to: Michelle De Rosayro-Ware, HR Director, Imedea, Inc., 11605 Haynes Bridge Rd., Ste 600, Alpharetta, GA 30004; Attn: Job TJ.

Tadiran Microwave Networks, Incorporated, a leading manufacturer of wireless infrastructure and last-mile transmission equipment has an immediate opening for an experienced database programmer. Position responsible for providing custom programming for the corporate database applications using Progress. Qualified candidates must have a BS in Management Information Systems, Comp. Science or related field, with a min. of 3 yrs. programming exp. in Progress 4GL, Unix System V and SYMIX database administration. Qualified applicants may send their resume and salary requirements to:

Tadiran Microwave Networks
Incorporated
Database Programmer
4000 Greenbrier #100A
Stafford, Texas 77477
Attn: Nancy Carter
Ph: (281) 263-6500 or email:
nancyca@microwavenet-
works.com
EOE/M/F/H/V

PROGRAMMER ANALYSTS required for our Charlotte office. Design, develop & maintain new and existing software applications using Developer 2000, Designer 2000, Visual Basic, Oracle, Cobol, C++, Erwin and object oriented design. Develop and implement client/server applications in oracle financials and using synchronization techniques in Oracle tools such as PL/SOL, Developer 2000 and designer 2000; write source codes based on design specifications, research feasibility of new products/features and add new features as requested by clients; perform unit, system and integration testing; Develop relational database systems in oracle. SOL server, Visual Basic Windows, Unix environment. Bachelors Degree required in Math, Computers, Engineering or any other related field of study plus two (2) yrs of experience in the job described above. 40 hrs/wk. Must have proof of legal authority to work permanently in the U.S. Please send resume and cover letter to HR Manager, Masterminds Global Solutions, 6000 Fairview Road, Ste 1200, Charlotte, NC 28210.



Axiowave Networks, located just outside Boston, is a start-up dedicated to revolutionizing the networking industry by developing the next generation of equipment and software for the core optical network. Founded by an experienced and successful team, Axiowave Networks is well-financed and is currently building the strongest team in the hottest industry, optical networking!

- Hardware Engineers
- Electrical Engineers
- System Test Engineers
- ASIC & FPGA Designers
- Verification Engineers
- Modeling Engineers
- Optical Engineers
- Diagnostic Engineers
- Network Engineers
- Software Engineers
- Technical Marketing Engineers

The aforementioned positions are available at all levels and require a minimum of a B.S., M.S. or Ph.D. and 0-5 years' experience.

For all positions, send resumes to:

Attn: Human Resources
Axiowave Networks, Inc.
100 Nickerson Road
Marlborough, MA 01752
www.axiowave.com

We are an equal opportunity employer.

Software Engineer (Charlotte, NC): Part of core development team responsible for research, design, development, testing, documentation and maintenance of object oriented Internet Banking financial applications and related computer systems in UNIX environment using DB2 database and object oriented language. Will analyze software requirements to determine feasibility of design within time and cost constraints and customer specifications. Will consult with hardware engineers to evaluate interface between hardware and software and operational and performance requirements of overall system. Recommend technically feasible business solutions to meet client needs. Responsible for translating business specifications, user interfaces, mapping documents and logical data models of complex project lifecycles to create a technical design and database model with a feasible development process and specific time and cost constraints according to customer specifications. Must have Bachelor's Degree, or foreign degree equivalent, in Computer Science, Engineering, Information Systems or related field. Must have 1 year experience in position offered (Software Engineer) or 1 year experience in software analysis, design and development in business applications. Experience mentioned may have been obtained concurrently and must include: (i) 1 yr. experience in Object Oriented Design and Development; (ii) 1 yr. experience in DB2; (iii) 1 yr. experience in S.W.I.F.T. format specifications; (iv) 1 yr. experience in UNIX; and (v) 1 yr. experience in data modeling. Must have legal authority to work in the U.S. Send resume to: A. Dugan (REF:SE), S1 Corporation, 2815 Coliseum Centre Drive, Charlotte, NC 28217.

Systems Programmer Analyst, First Union Corp. position in Phil., PA. Design, enhance, code & test programs for enriching the functionality of the International Funds Transfer appl. Provide ongoing support for the existing prod. systems. Advise & assist internal customers in executing acceptance tests. Reqs. BABBS in Electrical & Electronics Eng. or Comp. Science & 2 yrs in pos. offd. or as a Programmer, Analyst or Consultant. The 2 yrs reqd. exp must have incl work w/ appl. dvlp. on the Tandem Operating system, prog. lang. such as TAL, SCOBOL, DDL and TACL. 1 yr of the reqd exp. must have incl work w/ Pathway, Enscribe Database & TMF. 1 yr of the reqd exp. must have incl. prog. for the SWIFT interface. \$58,000 - \$95,700, 40hrs/wk, Send resume & cvr. ltr. to Sabrina Miller, 1525 West W. T. Harris Blvd., NC0775, Charlotte, NC 28288-0775.

F/T Programmer/Analyst. Responsible for designing & testing applications using JD Edwards One World software 73.3 w/Oracle. Develop conversion programs & modify source codes using SQL, ODBC & Unix. Perform software modifications, evaluate business requirements & design customized applications. Must have Bachelor's degree in Computer Science, any Engineering discipline or related field. Foreign degree equivalent accepted. Must have 2 yrs. exp. in job offered or position w/same duties. Salary: \$80,000. Resume to Brian Jones, PSS World Medical, Inc., 4345 Southpoint Blvd., Jacksonville, FL 32216.

Sr. Programmer Analyst-Analyze, design, develop, implement & support SAP systems & develop conversion methodology to support future SAP implementations. Monitor, maintain & enhance user interfaces, backend processes, database structures, reports & queries. Must have Master's degree in Computer Science, Physics, or Engineering plus 4 yrs work exp. Please fax resumes to Minolta Corporation, HR Dept: 845-358-6107

Softw. Dev. co seeks Sr. Developer; provide design leadership; Develop, implement and test web based and/or consulting tool software using Java/J2EE, XML, RDB, and rules engine technology; Tools and runtime environment includes Rational, IBM, Weblogic, Oracle, and ILOG products; Req'd. MS plus 1 yr exp or BS plus 5 yrs exp. or equiv. in edu & exp. in CS or related field; exp. in developing and implementing rules engine technology highly desirable; competent salary & benefits; reply to: brent_carlson@logiclibrary.com

Computer Network (Support Specialist)-Customize client networks & advanced web apps. Provide tech'l advice on integrated IT solutions. Design software pkgs for business network'g systems. Hard & software integration, cabling, web integration & apps, program'g & troubleshoot'g. 35 hrs. \$16.80 hr. 4 yrs exp. Fax resume to (305) 574-7882, Attn: Mr. Portillo.



The Gillette Company is the world leader in more than a dozen consumer product categories. Global World Class operations are increasingly dependent on Information Technology. Exciting opportunities exist in global business process integration initiatives. We are currently seeking the following highly qualified professionals to join the Gillette IT team in the Boston area.

The following positions commonly require a Bachelor's degree (or equivalent) in Computer Science, MIS, Business Admin., or similarly relevant field, and 3-5 years relevant experience.

! Staff Programmer Analysts

! (SAP) Staff Basis Administrators/Configuration-Integration Specialists/Application Developers

! Data Warehouse Architects/Developers/Data Administrators

! Telecommunications Analysts

Starting salaries range from \$56,100 to \$119,000 per year, together with paid vacation, medical, dental, life and disability insurances, and other industry-competitive benefits.

Please mail / email resume to: The Gillette Company, Prudential Tower Building, ATTN: Ms. Odelaine Durand, Corporate Recruiter, Boston, MA 02199. Email: Odelaine_Durand@Gillette.Com.

The Gillette Company is an equal employment opportunity employer

Technical Account Manager (Nashville, TN) Responsible for planning, organizing, directing and controlling all aspects of development, implementation and project management of web based healthcare software product services for client hospitals and physician services utilizing Meditech software. Will work with clients to identify, design and develop new and existing custom software products, enhancements and sites. Will ensure delivery commitments to clients. Will create training materials and train clients on the use of software products. Must have a Bachelor degree or foreign degree equivalent with major field of study in Computer Science, Management Information Systems or related field (i) 2 years experience in the position offered (Technical Account Manager) OR 2 years experience in a position involving the design and implementation of healthcare software products; (ii) 2 years experience in healthcare information systems project management; and (iii) 1 year of experience in Meditech software. Must have legal authority to work in U.S. Send resume to K. Johnson HR (Ref: TAM), HCA, One Park Plaza, Nashville, TN 37203.

Trusted by more hiring managers than any IT space in the world.

IT careers.com

SR. PROGRAMMER ANALYSTS (2) Two--to develop front end VB 4.0 Report Modules and OLE DB to generate the functionality of reports. Create various reports using Crystal Reports, write stored procedures and develop data uploading programs. Understand & interpret user requirements, create & design documentation & specification, create forms, reports & queries to satisfy user requirements, test & troubleshoot forms & reports and make necessary changes per requests of end users. Must have B.S. in Elect Engrng. or Computer Science + 5 yrs exp. **SYSTEMS ANALYST (1)** One--to perform detailed analysis & consolidate various data sources to construct central data repository to be utilized to query & generate reports & solutions. Write reports, field survey & train end users. Must be efficient with Aperture, AutoCad, CorelDraw, CD Creator, Dbase, Harvard Graphics, Lotus 1-2-3, Microsoft Word & Excel, MiniCad, Photo-shop, Primavera, Quark Express & WordPerfect computer software, required by Information Technology Consultants in New York, NY. Must have M.S.+ 3 yrs exp. Respond to: Andrew I.e Guelaff, CEO, SVR Group, Inc. 750 Lexington Avenue, 27th Floor, New York, NY 10022. Fax: 212-888-4783.

Data Base Administrator sought! by broadband bi-directional wireless communications provider located in Nashua, NH. Must have Bachelor's degree, or equivalent, in Computer Engineering, or in a related field and three years of experience in the field. Respond to HR Dept, Spike Broadband Systems, Inc., Millyard Technology Park, 11 Pine Street Extension, Nashua, NH 03060.

Hardware Engineer, wanted by optical networking system developer in Oceanport, NJ. Must have Master of Science in Electronic Engineering, Computer Science or related field and 1 yr. exp. in job offered. Respond to Doreen Connors, HR Department (ref# 033), Tellium, Inc., 2 Crescent Place, Oceanport, NJ 07757.

F/T Chief Technology Officer. Resp. for managing co. MIS dept., directing & monitoring all aspects of design, production, implementation, distributing & marketing of co. software applications product line. Must have Bachelor's deg. in CS, any Engineering discipline or related field. Foreign deg. equiv. accepted. Must have 8 yrs. exp. in job offered or position w/same duties. Salary \$125,000. Resume to: Marcia Taylor, Bennett Technology Group, LLC, 1001 Industrial Pkwy., P.O. Box 569, McDonough, GA 30253

S/W Engineers to design, develop, implement business applications under client/server architecture using C, C++, Oracle, SQL, PL/SOL, Pro*C, etc on UNIX and Win OS; perform user req analysis and business rule implementation; create repeatable reusable process for handling errors, retrieval, updates, data download/uploads; write triggers, stored procedures and perform database tuning; train/assist end users. Require: MS or foreign equiv. in CS or Electronics/Computer Engineering. Salary: \$80,000/yr f/t. Resumes to ECS, Inc. 8744 Main Street, Suite 101, Woodstock, GA 30188.

Systems Analyst-Provide primary support for SAP information system, including resolution of daily support issues, system enhancements & upgrades, monitoring daily program interfaces & enhancements, & assistance in the development of long-term SAP system strategies. Must have Bachelor's degree in Computer Science, Physics, or Engineering plus 3 yrs work exp. Please fax resumes to Minolta Corporation, HR Dept: 845-358-6107

Systems Analyst-Atlanta. Analyze, design, develop, test and implement software apps, using C++, Visual C++, VB, ASP, Oracle & Related tools, SQL Server, IIS, MTS, DAO/RDO/ADO, Rogue-wave, Orbix, Com/Deom. BS Computer Science/Related Field with 2 years exp. in job offered required. Multiple positions. Travel to client sites req'd. Prevailing wage & Benefits. Contact HR, Wavesoft, Inc., 875 Old Roswell Rd., Suite B-300, Roswell, GA 30076. EOE.

Application Developer: Using Visual Basic, Visual Interdev, ASP, JavaScript, HTML, C++, DBMS & SQL server to design, develop, test & implement Internet & client server applications in an NT environment. Req. MS or equiv. In CS, CIS or MIS w. proficiency in Visual Basic, C++, JavaScript & SQL server, 40hr/wk, 8-5, \$67,100/yr. Contact EnerTouch, Inc. 1899 Parker CT, Stone Mountain, GA 30087, email: careers@Enertouch.com.

Several computer related positions available for large software development, support and sales company. Degree, technical skills & experience vary per position. Send resume to Phyllis Scott, MAPICS, Inc., 1000 Windward Concourse Parkway, Suite 100, Alpharetta, GA 30005.

Database Administrator. 8a-5p. 40 hrs/wk. Dsgn, dvlp, support d/base structures; do d/base performance tuning, coding triggers/stored procedures, systm analysis; maintain, tune, back-up, upgrade existing d/base; test & troubleshoot d/base client/server applics for data integrity, security & warehousing using Delphi 4GL, mSQL C API, PL/SQL, Oracle, Dvlp & JDBC. Masters or equiv deg in Comp Sci, Electronics, Electrical or related branch of Engg. Job loc: College Park, GA. Send resume w/ref #001 to: HR Director, Stanley Associates, Inc., 300 N. Washington St, Ste 400, Alexandria, VA 22314.

Several f/t positions open for exp'd Prog/Analysts and S/W Engineers skilled in some of the following: VB, HTML, Java, COM, IIS, ASP, Oracle, Developer 2000, Sybase, Oracle Databases, PL/SOL, Windows NT, UNIX, DOS, database admin, UNIX admin etc. All positions require a BS/MS with conc. in CS/Engg (any branch), Math, Business or related field (or its foreign equiv. in edu and exp). Highly competitive salary. 60% traveling involved. Send resume to: InfoSmart Technologies, Inc. 385 Leatherman Ct. Alpharetta, GA 30005

Network Engineer, wanted by optical networking system developer in Oceanport, NJ. Must have Bachelor's degree in Engineering, Computer Science or related field and 2 yr. exp. in job offered or in Engineering. Respond to Doreen Connors, HR Department (ref# 039), Tellium, 2 Crescent Place, Oceanport, NJ 07757.

Senior Software Engineer. Client sites in New Jersey, Kentucky, and elsewhere. Masters degree or equivalent with 4+ years of experience in business process re-engineering and transformation, program and project management using CA Manman-X or BaaN ERP. Mon-Fri. 40 hrs/wk, excellent salary. Must have proof of legal authority to work in the U.S. Send resume to: info@geo-matrix.com

NEED TO HIRE. START WITH US.

ITcareers and ITcareers.com reach more than 2/3 of all US IT workers every week. If you need to hire top talent, start by hiring us. Call your ITcareers Sales Representative or Janis Crowley at 1-800-762-2977.

IT CAREERS where the best get better

WITI LEADERSHIPXCELLENCETM ONLINE

Advancing Women Through Technology



***Acquire the skills you need to take
the next step in your career.
Become a WITI Certified Leader.***

*"...the first module was fantastic!
I'm very enthusiastic about this course! Thank you."*

LINNIS JELLINEK, CFP

WITI, the premiere association advancing women through technology, introduces **LEADERSHIPXCELLENCE ONLINE** – the first online leadership development and training program specifically designed for women.

- ▶ Take the courses that coincide with your needs – **LEADERSHIPXCELLENCE ONLINE** starts with personal analyses of your strengths and weaknesses. Based on the results, choose the courses that will bring out your potential to become a true leader.
- ▶ Attend class whenever and wherever you want – at home, from the office, or while traveling. There are no schedule conflicts, no wasted time or effort. When you are ready, you just click into class and start acquiring leadership skills.
- ▶ 100% Online: Practical audio and video presentation accompanied by assignments that reflect real work environment situations.
- ▶ Complete 6 courses to become a **WITI CERTIFIED LEADER**, or simply choose individual courses to improve your personal skill-level. What you learn can be immediately applied to your career success.
- ▶ You'll be studying with other successful professionals, creating a strong network as you learn. Instructors are accessible, giving personal advice and coaching in threaded discussion groups.
- ▶ Individual **LEADERSHIPXCELLENCE ONLINE** courses can easily be completed in 4 weeks – it's an affordable and fast way to jump start your career.



Take the **LEADERSHIPXCELLENCE ASSESSMENT DEMO** by going to <http://leadx.witi.com> – enter the userID "witi" and the password "witi"

***Register Now at <http://leadx.witi.com>
to take advantage of our special introductory price!***

IT Careers: Certification, Training Offered in Multiple Formats

Anyone building a career in information technology knows this reality – you're only as good as the knowledge you have concerning the latest technologies. That's why education and certification programs continue to develop and be offered at vendor sites, in boot camp classrooms and online.

Bad Dog's Training Planet, Inc. in Grass Valley, CA, is a reseller of certification and training. Gary Tippner, company founder and president, says **Training Planet** has been reselling certification and training products for about three years. Prior to 1998, **Bad Dogs'** staff designed web sites and set up e-market opportunities for clients. "As the industry evolved and this area became more and more crowded, I started looking at where the profit margins were shifting," says Tippner. "Training and certification appeared as the areas of opportunity.

"We evaluate manufacturers' certification products and services to identify the top training values for the dollar, then provide it to our customers," explains Tippner.

Despite increasing reliance on online e-learning, which allows self-study from home, Tippner believes that online training isn't always the best solution. "The bandwidth most users have available doesn't make this the best option. We're just not there yet."

Instead, **Training Planet** provides a combination of interactive CDs and video, as well as intense classroom learning known as boot camps. "The boot camps condense the learning into a five- or seven-day period, instead of months," says Tippner.

He notes that the training and certification market has softened some in recent months as companies cut back and individuals seeking training are holding off. "However, we're seeing continued growth from government agencies and education," Tippner says. "The hot



courses include CISCO, A+, Network+, CDIA document imaging, Oracle and MCSE. Being certified shows that the person has reached a level of competence that is accepted and valued by the industry. Also, many employers require certification as a condition of employment or for advancement opportunities."

For more job opportunities with certification and training firms, turn to the pages of **ITcareers**.

- If you'd like to take part in an upcoming **ITcareers** feature, contact Jonis Crowley, 650.312.0607 or jonis_crowley@itcareers.net.
- Produced by Corole R. Hedden
- Designed by Aldeboran Graphic Solutions



The Premier Organization for African Americans in Information Technology
BDPA Information Technology Thought Leaders

23RD ANNUAL NATIONAL CONFERENCE & CAREER FAIR

"Empowering the Nation Through Information"
The Sheraton Chicago Hotel & Towers, Chicago, Illinois

Attend our Electrifying Sessions with speakers:



JOHN W. THOMPSON
Chief Executive Officer
Symantec Corporation
Keynote Speaker at the Awards
Banquet, Saturday August 18, 2001



Empowering the Nation through Information Town Hall featuring **Tony Brown, Ambassador 2001 Conference**



IT Plenary Session featuring Moderator **Tavis Smiley, Founder of the Tavis Smiley Foundation**



Entrepreneur Showcase Luncheon featuring Guest Speaker, **Sonya Donaldson, Technology Editor, Black Enterprise**

- Career fair featuring numerous national and international companies
- Certification Courses taught by Qualified Professionals in the Project Management, XML and System Testing skill areas
- Over 50 seminars and workshops hosted by IT Professionals for IT Professionals
- Formal and informal networking opportunities with IT Professionals and Executives from around the country.
- National High School Computer Competition for grades 9 - 12
- Youth Conference; grades 9 - 12
- Senior Management Forum

Attend our

Abbott Laboratories	Federal Reserve Information Technology	Mayo Clinic	State Farm Insurance
ABN AMRO	First Union	McDonald's Corp	The Gillette Company
Allstate Insurance Co	GlaxoSmithKline	MERCK & Co	Toyota Motor Manufacturing North America
American Express	Hallmark Cards, Inc.	Microsoft	United Airlines
AON Corporation	Hewitt Associates LLC	Miller Brewing Company	Verizon Communications
Bank Of America	Household International	Northwest Airlines	Wachovia Corporation
Cap Gemini Ernst & Young	IBM	Pricewaterhouse Coopers	Walgreens
CitiGroup Global Technology	Lexis-Nexis	Progressive Insurance	Walt Disney World
Compuware	Lincoln Re	Prudential Financial	World SpanBank of America
Edward Jones	MasterCard International	Royal Caribbean Cruise Lines	
EPA		Sears, Roebuck Co	

Career Fair featuring:

DON'T MISS

this **technology-packed** event!!
More professionals, More technology, More networking,
More opportunity for professional growth!!

REGISTER TODAY AT: www.bdpa.org or 1-800-727-BDPA

Information Technology: Publishing Webcasts Research Events

<http://careers.idg.com>

IDG
INTERNATIONAL DATA GROUP

Programmer Analyst: Plan, develop, test and document computer software using ORACLE FORMS, DESIGNER, ORACLE, Visual Basic, PL/SQL and debugging tools, including program construction, distributed processing and enhancement of software systems for wider applications. BS in Comp Science (or equivalent) & 1 yr exp. Send Resume: HR Dept, eTransitions, Inc., 11 Grist Mill Rd, Lebanon, NJ 08833.

e-lite
companies

e-merging
companies

e-ssential
companies

e-normous
opportunities

ITcareers

AUGUST 14-15, 2001 • DENVER, CO • ADAM'S MARK

WIRELESS MEDICAL SUMMIT

REGISTER NOW!

Presented By:



Call Maria Cianflone at 312-780-0700 ext.175

For a Special Discount
or Register Online at www.acius.net

together Optimizing Power

When a company touches as many lives in as many different ways as Florida Power & Light, doing the right things right becomes much more than a hip phrase. At FPL, we connect with our customers by striving to understand their diverse needs and creating solutions that work for them.

Along with working for an exceptional company that was recently ranked by Computerworld as one of the Top 100 Best Places To Work in IT, you'll also revel in the fabulous lifestyle found in South Florida! Recognized as one of the best places to live and work in the country, this is an area known for its leisure-time action; culture and night life; professional sports; reasonable living costs with NO STATE INCOME TAX; and warm friendliness - all under beautiful sunny skies! Join us in NORTH PALM BEACH, FLORIDA and together we'll transform the future.

Programmer/Analyst

The selected candidate will analyze, design, develop, test, debug, implement, maintain, and/or enhance existing or new systems in a reliable and efficient manner. You will also use your strong analytical and attention to detail abilities to create front-end user interfaces to new or existing databases using a combination of programming languages. Technical knowledge of Oracle RDBMS, PL/SQL, and Oracle Forms & Reports required. Familiarity with Oracle Discover, Visual Basic, JAVA, Energy Trading Systems and Market Facing Systems desired.



FPL
Transforming
THE FUTURE
www.fpl.com

Systems Administrator

Applying your excellent technical abilities, you will support the trading floor to resolve various technical problems and handle technical needs on various projects. To qualify, you must have at least 3-5 years of experience supporting computer networks and end-users along with servers and workstations. Must be experienced in multiple hardware and software platforms.

We offer competitive compensation and excellent, flexible benefits including medical/dental coverage, tuition assistance, 401(k), and more. For consideration, please email your resume to: irma_sulaiman@fpl.com; or fax your resume to: 305/552-3641 (Clearly indicate the Job Code AMCMWRNEX in the upper right hand corner of your resume).

We are a drug-free, non-smoking work place and an equal opportunity employer.

The MathWorks leads the market in developing and delivering high performance interactive software products such as MATLAB® to the engineering and scientific communities. We're increasing our lead by hiring the best people for every job in the organization. We have the following positions available at our offices in Natick, MA

Software Engineer

Design, develop and test the MATLAB family of products. Programming experience in MATLAB, and/or C, C++, Java is required.

The aforementioned positions are available at all levels and require a minimum of a B.S. or M.S. in Computer Science, Engineering, Math or a related degree and 0-5 years experience with MATLAB, Simulink, RTW, Controls, or DSP Environments.

Communications Engineer

Develop and enhance state-of-the-art algorithms used to simulate and analyze advanced communications systems. Prior experience simulating communication systems using MATLAB. Strong theoretical knowledge of advanced communication systems and algorithms.

Senior Software Engineer with programming experience in MATLAB and/or C, C++, Java. Experience in Simulation, DSP Image Processing or Controls is required. Ph.D required.

Additional Opportunities Include:

Software Engineer - Quality Control, PAGE QE

Develop test suites and conduct hands-on testing of the MathWorks applications products. Programming experience in MATLAB and/or C, C++, Java.

Software Engineer Real-Time Application Specialist

Develop next generation embedded real-time code generation product. Experience using Perl, M, C and TLC programming languages is required.

Senior Real-Time Software Development Engineer

Develop MATLAB and C code for new simulation and code generation applications of Simulink and interface automatically generated code running in real-time on The MathWorks PC Target product. Experience with Real-time systems and C programming is required.

- Senior Accountant
- Financial Analyst
- Pricing & Licensing Specialists
- Graphics Developers
- Compiler Engineers
- Embedded Engineers
- Training Engineers
- Technical Writers
- DSP Simulink Developers
- Process Control Engineers
- Program Managers
- Technical Marketing Managers

For fastest consideration interested candidates should e-mail their resume, indicating position of interest to: resumes@mathworks.com. Attn: Human Resources - Job Code: IW7/01 The MathWorks, Inc., 3 Apple Hill Drive Natick, MA 01760-2098 Fax: (800) 434-8967

The MathWorks

DEVELOPERS OF MATLAB

We are an Equal Opportunity Affirmative Action Employer. ©2001 by The MathWorks, Inc.

www.mathworks.com

How to Contact Computerworld

TELEPHONE/FAX

Main phone number..... (508) 879-0700
All editors unless otherwise noted below
Main fax number..... (508) 875-8931
24-hour news tip line..... (508) 620-7716

E-MAIL

Our Web address is **www.computerworld.com**.
 All staff members can be reached
 via e-mail using the form:
firstname_lastname@computerworld.com.

All IDG News Service correspondents
 can be reached using the form:
firstname_lastname@idg.com.

LETTERS TO THE EDITOR

Letters to the editor are welcome and
 should be sent to: **letters@computerworld.com**.
Include your address and telephone number.

MAIL ADDRESS

**PO Box 9171, 500 Old Connecticut Path,
 Framingham, Mass. 01701**

SUBSCRIPTIONS/BACK ISSUES

Subscription rates: U.S., \$68/year; Canada,
 \$110/year; Central and South America,
 \$250/year; all others, \$295/year

Phone..... (800) 552-4431
E-mail..... circulation@computerworld.com
Back Issues..... (508) 820-8167

REPRINTS/PERMISSIONS

Phone.... Ray Trynovich (717) 399-1900, ext. 124
E-mail..... rtry@rmsreprints.com

CONTACTING CW EDITORS

We invite readers to call or write with their
 comments and ideas. It is best to submit
 ideas to one of the department editors and
 the appropriate beat reporter.

Editor in Chief Maryfran Johnson (508) 820-8179
Editorial Director, Print/Online Patricia Keefe (508) 820-8183

DEPARTMENT/BUREAU EDITORS

News Editor Anne McCrory (508) 820-8205
Assistant News Editor Don Tennant (508) 620-7714
Business Editor Thomas Hoffman (845) 988-9630
Technology Editor Tommy Peterson (508) 620-7729
IT Careers Editor David B. Weldon (508) 820-8166
Washington Bureau Chief Mitch Betts (202) 737-6049
West Coast Bureau Chief Pirm Fox (650) 524-7116

REPORTERS

Mobile computing/wireless Bob Brewin (301) 277-8069
Internetworking, telecom/wireless,
defense and aerospace James Cope (219) 273-5369
Application development, Java,
Web infrastructure, automotive Lee Copeland (773) 278-0234
Careers, labor issues, outsourcing,
application service providers,
health care Julekha Dash (804) 295-9512
General assignment,
e-mail, groupware, travel Jennifer DiSabatino (508) 620-8122
Network, systems management Sami Lais (301) 270-1427
E-commerce Michael Meehan (508) 620-7704
Financial services, storage Lucas Mearian (508) 820-8215
General assignment, Intel servers,
transportation/carriers Linda Rosencrance (508) 628-4734
Microsoft, retail industry Carol Siwa (508) 628-4731
Enterprise resource planning,
customer relationship management
and supply-chain software; Novell Marc L. Songini (508) 820-9182
State/federal government,
antitrust, legal issues, politics Patrick Thibodeau (202) 737-6081

Security, databases Dan Verton (703) 321-2277
Large systems/high-end
Web server technology, security,
heavy manufacturing Jaikumar Vijayan (508) 820-8220
General assignment,
Linux and Unix operating systems Todd Weiss (717) 560-5255

DEFINITIONS

Senior News Columnist Frank Hayes (503) 252-0100
Columns Editor Rick Saia (508) 820-8118

FEATURE EDITORS

Special Projects Editor Ellen Fanning (508) 820-8204
Editor at Large Kevin Fogarty (508) 820-8248
Editor at Large Mark Hall (503) 391-1158
Reviews Russell Kay (508) 820-8175
Special Projects Editor Julia King (610) 532-7599
Technology Evaluations Editor Robert L. Mitchell (508) 820-8177

FEATURE WRITERS

Gary H. Anthes (202) 737-7242;
 Matt Hamblen (508) 820-5567;
 Kathleen Melymuka (508) 828-4931;
 Kim S. Nash (773) 275-4133;
 Matthew Schwartz (508) 820-8265;
 Melissa Solomon (508) 620-7754
 Deborah Radcliff (707) 829-5823

COMPUTERWORLD.COM

Director, online and design Tom Monahan (508) 820-8218
Managing editor/online Sharon Machlis (508) 820-8231
Online news editor Marian Prokop (508) 620-7717
Online news editor Craig Stedman (508) 820-8120
Newsletter and online editor Ken Mingis (503) 820-8545
Communities director Vanessa DiMauro (508) 820-8110
Communities senior editor/writer Rick Saia (508) 820-8118
Communities page editor Brian Sullivan (508) 820-7780
Communities builder Barbara Steinberg (508) 620-7782
Associate art director David Waugh (508) 820-8142

Associate art director John R. Brillon (508) 820-8216

Keeley Guillermo, marketing associate/researcher; Peter Smith,
Web development manager; Kevin Gerich, Mark Savery, **Web developers;**
 Bill Rigby, **associate Web developer;** David Ramel, **online production coor-**
dinator and e-mail newsletter editor; Christopher Gibbons, **senior Web**
designer; Paul Krasnoo, Matthew Moring, **graphic designers**

RESEARCH

Mari Keefe, research manager; Allison Wright, research associate;
 Gussie Wilson, research assistant; Rachel Markey, Amelia Auborg,
 Johanna Jackson, research interns

CDPY DESK

Jamie Eckle, managing editor/production (508) 820-8202;
 Jean Consilvio, assistant managing editor/production;
 Michele Lee, Bob Rawson, senior copy editors; Jacqueline Day, Eugene
 Demaitre, Linda Frank, Mike Parent, Monica Sambataro, copy editors

GRAPHIC DESIGN

Stephanie Faucher, design director, (508) 820-8235;
 Mitchell J. Hayes, art director; April D'Connor, associate art director;
 Julie D'Errico, Michael Knapp, graphic designers; Susan Cahill, graphics
 coordinator; Rich Tennant, John Klossner, cartoonists

ADMINISTRATIVE SUPPORT

Linda Gorgone, office manager (ext. 8176);
 Lorraine Witzell (ext. 8139); Cheryl Dudek (ext. 8178)

CONTRIBUTING COLUMNISTS

Joe Auer, Jim Champy, David Foote, John Gantz, Michael Gartenberg, Dan
 Gillmor, Peter G.W. Keen, Bill Laberis, Thornton A. May, David Moschella,
 Fran Quittel, Paul A. Strassmann, Don Tapscott, William M. Ulrich, Ed Yourdon

CONTRIBUTING WRITERS

Leslie Goff, Amy Helen Johnson

COMPANIES IN THIS ISSUE

Page number refers to page on which story begins.
 Company names can also be searched at
www.computerworld.com

ACTIVE VOICE INC. 48
 ADVANCE MIXING TECHNOLOGIES 6
 AEROGROUP INTERNATIONAL INC. 32
 AIR CANADA 61
 ALASKA NATIVE WIRELESS LLC 8
 ALL TEL INFORMATION SERVICES INC. 51
 AMAZON.COM INC. 7,30
 AMERICA ONLINE INC. 12,24,32
 AMERICAN COUNCIL OF LIFE INSURERS 18
 AMERICAN EXPRESS CO. 19
 AMERICAN MUSEUM
 OF NATURAL HISTORY 47
 AMERISURE COS. 18
 AMERITRADE HOLDING CORP. 36
 AOL TIME WARNER INC. 24,32
 APEX LEARNING INC. 30
 AT&T CORP. 1,30
 AT&T SOLUTIONS 1
 AT&T WIRELESS SERVICES INC. 8
 BAAN CO. 15
 BANK ONE CORP. 36
 BEA SYSTEMS INC. 7
 BERKELEY SOFTWARE DESIGN INC. 16
 BERTELSMANN AG. 43
 BHC ALHAMBRA HOSPITAL 32
 BMC SOFTWARE INC. 20
 BMG ENTERTAINMENT 43
 BRITISH TELECOM PLC. 15,30
 BRM CAPITAL 51
 BROADBASE SOFTWARE INC. 42
 BROCAOE COMMUNICATIONS
 SYSTEMS INC. 36
 BUSINESS LAYERS 6
 CATERPILLAR INC. 8
 CAUCUS THE ASSOCIATION OF HIGH-TECH
 ACQUISITION PROFESSIONALS 43
 CENTRE FOR
 INNOVATIVE MANAGEMENT 32
 CHALLENGER, GRAY & CHRISTMAS INC. 8
 CHANGEPOINT CORP. 51
 CHECKPOINT SOFTWARE
 TECHNOLOGIES LTD. 48

CHEVRON INFORMATION
 TECHNOLOGY CO. 6
 CHORIOANT SOFTWARE INC. 42
 CINGULAR WIRELESS 8
 CIRCUIT CITY STORES INC. 40
 CISCO SYSTEMS INC. 1,20,48
 COMERICA INC. 18
 COMMERCE ONE INC. 15
 COMPAQ COMPUTER CORP. 8,16,20,24,48
 COMPUTER ASSOCIATES
 INTERNATIONAL INC. 12
 COMPUTER SCIENCES CORP. 12
 CORIEM LLC 15
 CORECHANGE INC. 61
 CRITICAL INCIDENT ASSOCIATES 32,34
 CROSSTEC CORP. 50
 CRYSTAL DECISIONS INC. 30
 CURRENT ANALYSIS INC. 12
 CUTTER CONSORTIUM 12,43
 DELL COMPUTER CORP. 1,20,46
 DELOITTE & TOUCHE LLP 15
 DEUTSCHE TELEKOM AG. 15
 DIRECTFIT 54
 DOBSON COMMUNICATIONS CORP. 8
 DOCUMENTUM INC. 40
 DOVEBIO INC. 38
 EI NETWORKS 7
 EPIPHANY INC. 42
 EBAGS INC. 42
 EOGWATER TECHNOLOGY INC. 32
 ELECTRONIC PRIVACY
 INFORMATION CENTER 1
 EMC CORP. 8,36
 ENPORION INC. 15
 ENTERPRISE STORAGE GROUP INC. 8
 EPRESENCE INC. 6
 EVALUATOR GROUP INC. 8
 EVOLVE SOFTWARE INC. 51
 EXOSTAR LLC 15
 EXPOIA INC. 24
 FARPOINT GROUP 8
 FBI 33

FEDERAL
 COMMUNICATIONS COMMISSION 8
 FEDERAL TRADE COMMISSION 1
 FEOEX CORP. 12,15
 FEOEX EXPRESS 12
 FINGERHUT COS. 42
 FIRST DATA CORP. 22
 FLEET CRECIT SERVICES INC. 19
 FODORS.COM 24
 FORO MOTOR CO. 12
 FORRESTER RESEARCH INC. 51
 F-SECURE CORP. 6
 FUNK SOFTWARE INC. 46
 GARTNER INC. 16,19,24,36,40,43
 GEAC COMPUTER CORP. 32
 GENERAL MOTORS CORP. 7,30
 GIGA INFORMATION GROUP INC. 1,40
 GOODYEAR OUNLOP TIRES
 NORTH AMERICA LTD. 6
 GOOGLE INC. 24
 GRIOWARE INC. 20
 HANOSPRING INC. 24
 HARTE-HANKS INC. 42
 HAYOEN PLANETARIUM 47
 HEWLETT-PACKARD CO. 8,16,20,50
 HYPERION SOLUTIONS CORP. 42
 I2 TECHNOLOGIES INC. 16
 IBM 7,8,15,16,20,36,61
 IOC 1,7,20
 INFORMATION BUILDERS INC. 42
 INPUT 12
 INTEL CORP. 48
 INTERNATIONAL COMPUTER
 NEGOTIATIONS INC. 43
 INTERNET ALLIANCE 18
 INTERNET ENGINEERING TASK FORCE 8
 INTRINSIC TECHNOLOGIES 54
 J.C. PENNEY CO. 40
 JACOBS ENGINEERING GROUP INC. 32
 JUNKBUSTERS CORP. 1
 JUPITER MEDIA METRIX INC. 40
 KANA SOFTWARE INC. 43
 KIA MOTORS CORP. 43
 KIA MOTORS EUROPE GMBH. 43
 KINKO'S INC. 48
 KONICA CORP. 48
 KRISPY KREME DOUGHNUTS INC. 61
 LUCENT TECHNOLOGIES INC. 1,20
 MANCHESTER INC. 43
 MASTERCARD INTERNATIONAL INC. 19
 MCORMOTT INTERNATIONAL INC. 1

MERIDIAN RESEARCH INC. 43
 META GROUP INC. 42,51
 MICROSOFT CORP. 1,6,22,2,4,40,48,50,51
 MOOIS PROFESSIONAL SERVICES INC. 43
 NAPSTER INC. 43
 NASA 47
 NATIONAL VIRTUAL OBSERVATORY 47
 NATIONWIDE FINANCIAL SERVICES INC. 18
 NEC COMPUTERS INC. 48
 NETSCAPE COMMUNICATIONS CORP. 24
 NEVILLE COMMUNICATIONS INC. 54
 NEWS CORP. 24
 NEXTWAVE TELECOM INC. 8
 NIKE INC. 6
 NIKU CORP. 51
 NORDSTROM INC. 51
 NORTEL NETWORKS CORP. 20
 NORTHERN TRUST CORP. 54
 NOVELL INC. 7
 NYCE CORP. 19
 O'REILLY & ASSOCIATES INC. 20
 OCCUPATIONAL SAFETY
 AND HEALTH ADMINISTRATION 32,33
 ORACLE APPLICATIONS USERS GROUP 6
 ORACLE CORP. 6,15,48,51
 ORAMA PARTNERS 51
 OWENS CORNING 38
 PALM INC. 24
 PATIENT CARE TECHNOLOGIES INC. 48
 PEOPLESOFT INC. 1,30
 PEROT SYSTEMS CORP. 30
 PHOCUSWRIGHT INC. 61
 PIER 1 IMPORTS INC. 40
 PNC FINANCIAL SERVICES GROUP INC. 51
 POLYCOM INC. 48
 PRISM OPPORTUNITY FUND 51
 PROCTER & GAMBLE CO. 7
 PROSIGHT INC. 51
 REO HAT INC. 20,46
 RSA SECURITY INC. 46
 SACRAMENTO POLICE DEPARTMENT 32
 SAKS INC. 40
 SALESLOGIX 30
 SALLIE MAE 42
 SALMON PCS LLC 8
 SALOMON SMITH BARNEY HOLDINGS INC. 12
 SAP AG 20
 SAS INSTITUTE INC. 42
 SCHROEDERS HOLDINGS PLC. 12
 SEAGULL SOFTWARE SYSTEMS INC. 43
 SEARS, ROEBUCK AND CO. 43

SECURITIES AND
 EXCHANGE COMMISSION 36
 SECURITYPORTAL.COM 6
 SELECTREGISTRY.COM 6
 SEQUOIA PARTNERS 51
 SILICON GRAPHICS INC. 20
 SINCLAIR OIL CORP. 1
 SOCIETY FOR HUMAN
 RESOURCES MANAGEMENT 32
 SONY CORP. 24
 SPRINT CORP. 1
 STORAGEAPPS INC. 8
 SUN MICROSYSTEMS INC. 12,16,20,22
 SUSE LINUX AG. 20
 SYMANTEC CORP. 50
 TECHNOLOGY BUSINESS
 RESEARCH INC. 20
 TERRA LYCOS SA 16
 THE ALEXANDER GROUP 38
 THE BOEING CO. 1,15
 THE BURTON GROUP 6
 THE CONNECTICUT HOSPICE INC. 48
 THE FREEBOS PROJECT 18
 THE MEN'S WEARHOUSE INC. 38
 THE NATIONAL SCIENCE FOUNDATION 47
 TIGHTEN CO. 16
 TIME WARNER CABLE 6
 TIME WARNER INC. 32
 TOOLBARN.COM INC. 16
 TOYSRUS.COM INC. 30
 TRAVELERS CORP. 38
 TURBOLINUX INC. 20
 UAL CORP. 7
 UNICA CORP. 42
 UNITED AIR LINES INC. 7
 UNITED PARCEL SERVICE INC. 22
 UPS AIR CARGO 15
 VASTERA INC. 12
 VERIZON COMMUNICATIONS 54
 VERIZON WIRELESS 8
 VIACOM INC. 24
 VIGNETTE CORP. 7
 VISA INTERNATIONAL INC. 19
 VOICESTREAM WIRELESS CORP. 8
 WOS TECHNOLOGIES SA 15
 WELLFLEET COMMUNICATIONS INC. 48
 WELLS FARGO & CO. 6
 WHITECROSS SYSTEMS INC. 42
 YAHOO INC. 24

ADVERTISERS INDEX

ASPECT 13
www.aspect.com
 Compaq Computer Corp. Servers 9
www.compaq.com
 Compaq Computer Corp. Wireless 21
www.compaq.com
 Computer Associates 2-3
www.ca.com
 CW DEMO Mobile 2001 C3
www.demomobile.com
 Hewlett-Packard 28
 IBM E-Infrastructure 41*
www.ibm.com
 IBM Software C4
www.ibm.com
 Information Warfare 17
www.osborne.com
 InterSystems Corp. 44
www.intersystems.com
 Microsoft Application Center 2000 26-27
www.microsoft.com
 Microsoft Manageability 10-11
www.microsoft.com
 Microsoft SQL Servers 52-53
www.microsoft.com
 Microstrategy 31
www.microstrategy.com
 NetWorld+Interop 2001 37
www.key3media.com/interop
 Red Hat 18,19
www.redhat.com
 SAS 4, 35
www.sas.com

*Regional Select Edition

This index is provided as an additional service. The publisher does
 not assume any liability for errors or omissions.

Continued from page 1

Outsourcing

Dermott spokesman Don Washington, who confirmed the information detailed in the memo. The document said the company also plans to evaluate other agreements with con-

tractors and vendors providing IT services "to determine if those relationships will be extended or amended." Washington declined to identify any of the vendors beyond AT&T.

The outsourcing deal with AT&T was announced in early 1999 and was supposed to run for 10 years. But Washington said McDermott, which did

\$1.9 billion worth of business last year and last week reported revenue of \$928.5 million for the first half of this year, decided it could better manage its IT operations on its own.

The change of heart followed a series of top-level management changes at McDermott in the past 12 months, including the hiring of a new

CEO, a new chief financial officer and a new head of IT. "Things change; leadership changes," Washington said.

AT&T spokesman Mike Cuno said the two companies had been in the process of renegotiating the outsourcing deal with an eye toward continuing the arrangement. "But ... corporate leadership changes, and McDermott decided that what was appropriate three years ago is not appropriate today," he said.

Cuno said it's common for users to periodically renegotiate contracts but unusual to have deals terminated altogether. However, AT&T Solutions is "in the business of serving our clients," he added. "If a client doesn't think [something] is right for them, we want to find a way to productively work with them."

Severing an outsourcing contract isn't particularly unusual, according to James Johnson, CEO of The Standish Group International Inc., a research firm in West Yarmouth, Mass. Johnson said the reasons given by McDermott for its decision to cut AT&T loose — new leadership and in-house efficiencies — are logical. With

Never Mind

What a difference two and a half years make:

ON MARCH 31, 1999

McDermott International signed a 10-year, \$600 million contract to outsource its global IT to AT&T Solutions. At the time, McDermott said the deal would save it money.

ON SEPT. 30, 2001

McDermott and AT&T Solutions will terminate their IT partnership. Now, McDermott says, it can do the work more effectively and efficiently in-house.

IBM and Air Canada Expand Relationship

Carrier to help design airline-specific systems in bid to recoup its IT costs

BY JENNIFER DISABATINO

S EVEN YEARS AGO, Air Canada took what at the time was an unusual step and decided to outsource all of its IT operations to IBM. Now, the company is making IBM its partner in a bid to recoup some of its expenses in developing airline-specific technology.

The new contract, which was signed earlier this month, is worth \$908 million over seven years and calls for IBM to manage Air Canada's global IT infrastructure.

The agreement also makes the two companies investment partners, and through IBM's research laboratories, they will develop new products and services for the airline industry, said John Segart, senior director of IT operations at Air Canada in Toronto.

IBM will also help Air Canada convert from a multiprotocol network to a pure IP network, which would make its various applications interoperable and reduce the number of directories needed.

The two companies will also design new interfaces for the large reservations systems,

which publish airline fares and use legacy technology. As much as possible, Air Canada will upgrade to newer, IP-compliant technology, Segart said.

The project includes an employee portal with a directory that's compliant with Version 3.0 of the Lightweight Directory Access Protocol.

"We figure to have it done in 18 to 24 months," Segart said. "The cleaning up of older things will take a while to work their way out."

While overhauling the network, Air Canada hopes to improve some of its products and services, such as in-flight Internet access and airport kiosks, for example, to "turn costs into profit," Segart said.

Philip Wolf, president and CEO of PhoCusWright Inc., a Sherman, Conn.-based research firm, downplayed the deal.

"I don't think anybody in the travel industry would take it as big news. IBM has a travel division based in Canada. To us folks in the industry it sounds like [an ordinary] contract," Wolf said. "Air Canada is interested in any alternate revenue streams to selling seats in airplanes. The airlines are always

looking for things they can do to create shareholder wealth."

Air Canada said it expects a return on investment of \$130 million on the \$908 million contract, which Wolf said "sounds reasonable."

In 1994, Air Canada moved its IT department onto the IBM payroll. At the same time, the airline retained IT professionals who were experts on the regulations that affect how certain technologies, such as reservations systems, are configured. ▀

Krispy Kreme Doughnuts Revamps Intranet With VPN

BY JENNIFER DISABATINO

Krispy Kreme Doughnuts Inc. has just completed a revamp of its 4-year-old intranet that puts all company information and applications online so employees from any location can access them with a Web browser over a virtual private network (VPN).

The enhanced intranet allows end users to view financial documents through a WYSIWYG HTML editing tool, instead of having to download files. It also lets

users submit financial reports online instead of having to fax them to corporate headquarters in Winston-Salem, N.C.

Employees can also access training information, check the local weather (cold days equal warm doughnuts) and take company surveys.

It all took about a month, "from tee to green," said Krispy Kreme CIO Frank Hood. The new portal, called MyKrispyKreme, was built on software from Corechange Inc. in Boston. ▀

new leadership often comes a new philosophy that differs with respect to outsourcing.

Both Washington and Cuno said AT&T will continue to manage wide-area voice and data networking for McDermott under a separate agreement signed in 1995.

But the outsourcing contract went much further, giving AT&T responsibility for 10,000 PCs and 350 servers at McDermott, as well as its LANs, end-to-end network management and some business applications. About 280 IT workers transferred from McDermott to AT&T as part of the deal.

The internal memo said McDermott "will immediately begin to evaluate staffing requirements" in connection with the ending of the outsourcing agreement. The company expects to offer jobs to most of the AT&T employees who currently support its IT operations, Washington said, although he added that hiring decisions will be based on the needs of individual facilities.

Washington declined to comment on the financial implications of the contract termination, but he said the computers and other IT assets now being managed by AT&T will be included in the transfer of duties back to McDermott. "We will not be going out and buying new systems," he said. ▀

FRANK HAYES/FRANKLY SPEAKING

The Need for Speed

DOES SPEED MATTER ANYMORE? You remember speed. It was one of the mantras of the dot-coms: Business at Internet speed meant everything had to happen fast, fast, fast. It was a dot-com article of faith, like believing that profits don't matter, that stock options are better than salaries and that market share is more important than anything.

Of course, these days, we know that profits start to matter a lot when venture capital dries up, that stock options don't look so good when the bottom falls out of the market, that market share won't pay the bills when the creditors come calling.

So what about speed?

It turns out that, for once, the dot-commers were right. Speed matters — maybe more now than ever.

Not the speed of hypergrowth or meteoric stock-price changes. Not speed at any cost. But speed that shaves hours or days or weeks off the process of making, selling and delivering products and services.

Speed that makes it possible for salespeople to close deals a little faster and promise delivery on a shorter schedule.

Speed that shrinks the process of manufacturing goods and shortens the time products sit in some warehouse.

Speed that gets fresh business information to executives and managers so they can make sense of it and act before the competition figures out what's going on.

Speed that makes a difference to the bottom line. The kind of speed IT shops should be delivering. Speed for users — the only kind of speed that matters.

OK, sure, that was easier to believe last year, when hyperkinetic dot-coms had your CEO in a panic and there was plenty of IT budget available for turning your business into an e-business that could run at Internet speed.

This year, the dot-coms aren't a threat. The go-go days are over. So where's the need for speed?

Right where it's always been. And we *really* need that speed now that business is slow.

It's harder than ever for sales guys to close that deal. It's tougher than ever for companies to shrink inventories. And it's more important than ever to keep managers and executives on top of what's hap-

pening in the business with red-hot data.

This is where speed makes a difference that shows up in deals made instead of lost, products moved instead of stuck gathering dust, actions taken in time instead of just a little too late.

And right now, you need those deals, those inventories moved, those timely actions taken.

True, there's no slack in the IT budget for any big Internet-speed projects.

But you don't need big projects. Every little thing your IT shop can do to make your business run faster is important now.

What you need is face time with users, asking one question: "How can we speed you up?"

Users know where the bottlenecks are. They know which bugs take forever to work around, what conditions or times of day bring applications grinding to a crawl, what screens just plain slow things down.

Ask. They'll tell you.

You can't fix all those problems, especially with no budget. But with a tweak here or an adjustment there, maybe you can fix some of them on the cheap. And for the ones you can't really fix, maybe there's a more elegant work-around or a scheduling change that will help.

You'll make some users a little happier — right now, they can use all the good news they can get. You'll solve a few real problems and come to understand what it will take to deal with the ones you can't solve. You'll learn some things you didn't know.

And it won't hurt your IT shop's reputation that, at a time when belts are tight and business is slow, IT people are out among the users, showing the colors, asking how they can help — and preaching the need for speed. ▀



FRANK HAYES, *Computerworld's* senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

SHARK TANK

EIGHT MILLION DOLLARS is missing from this bank's monthly cash processing report, wails the department's manager. After spending hours looking for bugs in the report, IT pilot fish learns that the "missing" money wasn't processed until Saturday, the day after the fiscal month closed. "Oh yeah, I called the staff in on Saturday because we were behind," says the manager. "Didn't I mention that?"

SOFTWARE DEVELOPER at an investment bank complains he can't access the network. Support pilot fish searches for the cause and finds it: The developer in the next cubicle over has unplugged the network cable from one side of the T connector attached to his workstation. "I was running an important batch job on a remote server," says developer, "and I unplugged the cable to get more bandwidth."

STUDENT in a training session on Windows 98 continually interrupts instructor pilot fish, asking how to customize every fea-

ture and tool. When fish finishes covering the Date/Time control panel, student becomes clearly upset. "You didn't tell us how to customize Date/Time!" student says. "What if I want to add my own time zone?"

USER ASKS PILOT FISH, "Can you install Aerobic Rider on my system?" It takes a beat, but fish finally dopes out what she *really* wants: Acrobat Reader.

PILOT FISH GETS user request: "Currently, my password for our production programs is 'sparky.' This is my dog's name. He is getting older, and I would like to change my password now before something happens to him. Could I change it to 'summer?' If not, I can think of something else."

Summer's almost gone, too. Let me hear from you: **sharky@computerworld.com**. You get a sharp Shark shirt if your true tale of IT life sees print — or if it shows up in the daily feed at computerworld.com/sharky.

The 5th Wave



"I like getting complaint letters by email. It's easier to delete than to shred."

MOVEMENT

CONVERGENCE

ANTICIPATION

FUTURE

PENETRATING

STIMULATE

CONNECT

EXCITEMENT

PIERCING

ABSORB

DEMO|mobile 2001

Where the future of mobile technology takes shape

SEE THE FUTURE

IDG Executive Forums industry analysts Jim Forbes and Chris Shipley have combed the industry to find the products expected to dominate the wireless market.

- Witness the launch of 35 market-changing products

OPINION WITH LEADERS

Attendees include analysts, venture backers, executives, products developers, technologists, and print and broadcast journalists from the technology and business media.

- Network with the industry's A-list

HEAR THE EXPERTS.

Get a front row seat on the future of mobile technology as thought leaders discuss their ideas and companies present their latest innovations during conference general sessions.

- On-stage demonstrations
- Insight into current issues in mobile computing
- Panel discussions and speakers

DEMOmobile is a perennial source of major deals, partnerships, acquisitions, and press coverage. Capitalize on business opportunities as mobile moves mainstream and make the connections to power your future by attending **DEMOmobile 2001**.

DEMOmobile 2001, September 5 - 7, 2001, LA JOLLA, CA

REGISTER NOW! WWW.DEMOMOBILE.COM or 1.800.633.4312

Please reference code DMA.2001C when registering online.

DEMOmobile 2001 Sponsors:

COMPUTERWORLD

InfoWorld

PR NEWSWIRE



DB2: 440,879.95 tpmC, \$25.03/tpmC, availability date 12/7/00. Oracle: 230,533 tpmC, \$4790/tpmC, availability date 6/8/01. Oracle: none posted. TPC-H 100GB results, DB2: 2,733 QphH, \$347/QphH. TPC-C, TPC-W and TPC-H are trademarks of the Transaction Processing Performance Council (www.tpc.org). IBM, the e-business logo and DB2 are registered trademarks of International Business Machines Corporation in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds. NIX is a registered trademark of Microsoft Corporation in the United States and other countries. Windows is a registered trademark of Microsoft Corporation in the United States and other countries. All rights reserved.

Based on TPC-C, C-W and TPC-H benchmark results, 100,000 item count results, availability date 10/1/01. Oracle: none posted. All IBM, the e-business logo and DB2 are registered trademarks of International Business Machines Corporation in the United States and/or other countries. Linux is a registered trademark of Linus Torvalds. NIX is a registered trademark of Microsoft Corporation in the United States and other countries. All rights reserved.



THE CODERNAUTS WERE ON A SEARCH FOR A DATABASE THAT RUNS ON LINUX®, UNIX® AND WINDOWS® 2000. THEY DISCOVERED:

DB2® OUTPERFORMS ORACLE

| CUSTOMERS KNOW IT, PARTNERS KNOW IT, BENCHMARKS PROVE IT |

 business software ibm.com/db2/outperform

IT'S A DIFFERENT KIND OF WORLD.
YOU NEED A DIFFERENT KIND OF SOFTWARE.